

CURRICULUM VITAE OF Jean SERRA

(January 2008)

General information

● Civil Status

- Name : SERRA Jean Paul Frédéric.
- French nationality.
- Military service completed as an artillery first lieutenant in 1967-1968.
- Married, two children.
- Professional address : Labo A2SI, ESIEE, 2 Bd Blaise Pascal, Cité Descartes, BP 99 ,
93162, Noisy-le-Grand France
- e-mail : j.serra@esiee.fr

● Education (Degrees, University)

- 1957 : Scientific "baccalauréat"
- 1957 : First price from the School of Music, ORAN (Algeria), in the piano section.
- 1962 : Engineering degree from the Ecole Nationale Supérieure des Mines de Nancy.
- 1965 : Bachelor degree in philosophy/psychology, University of Nancy.
- 1967 : PhD Thesis in Mathematical Geology at the University of Nancy.
- 1986 : Doctorat d'Etat in Mathematics, at Pierre et Marie Curie University, Paris.

● Languages

- French (native language)
- Russian
- English (fluent)
- Spanish (fluent)

Professional Events

● Career (Employers, Positions)

- 1962-1966 : Research engineer at IRSID (Institut de la Recherche de la Sidérurgie, France) and PhD student in mathematical geology under the guidance of Prof. G. Matheron. Subject : Stochastic modeling of the iron deposit of Lorraine, at various scales.
- 1966-1967 : Military service.
- 1968-1986 : "Maître de Recherches" and Assistant Director of the Centre of Mathematical Morphology, at the Ecole des Mines de Paris, responsible of the department of geostatistics.
- 1971 : Sabbatical year at the Lomonossov University, Moscow.

- 1983 : Professor at the Ecole des Mines de Paris.
- 1983-: Member of the Editorial Board of Acta Stereologica
- 1986-2005 : "Directeur de Recherches" (equivalent to tenured Professor), Director of the Centre de Morphologie Mathématique, at the Ecole des Mines de Paris.
- 1988-1991 : Member of the Scientific Board of the French T.V. cultural program.
- 1989- : Member of the Editorial Board of the Journal of Visual Communications and Image Representation.
- 1990-: Member of the Editorial Board of the Journal of Mathematical Imaging and Vision.
- 1991-1993 : Chairman of the "Image Algebra and Morphological Processing Conference" in SPIE Annual Meeting, San Diego, California, USA.
- 1991-1992 : Sabbatical year at the Universities UPC and UAB, Barcelona, Spain.
- 1993 : Founder of the International Society for Mathematical Morphology, and first president of this society.
- 1993: Chairman of the first Int. Conf. in Mathematical Morphology, Barcelona, Spain.
- 1994: Chairman of the second Int. Conf. in Mathematical Morphology, Fontainebleau, France.
- 2000 : Technical Chairman of the 15th Int. Conf. on Pattern Recognition, ICIP 2000 Barcelona, Spain
- From 2005: Professor Emeritus at Paris-Est University (ESIEE Institute)
- 2006: Member of the Evaluation Board for the University of Uppsala
- From 2006 : Coordinator of the international net *Modelling Environmental Risks and Disasters from RS and GIS Data*, which involves China, Thailand Malaysia and France

Honors, Awards

- 1979-1983 : Vice-President of the International Society for Stereology.
- 1982 : ESCLANGON price, awarded by the French Society of Physics.
- 1988 : First award of the great price of the AFCET Society (French equivalent for IEEE).
- 1989 : Chevalier of the National Order of Merit.
- 1993 : Doctor Honoris Causa of the Autonomous University of Barcelona, Spain.
- 2007: Foreign Member of the Royal Society of Sciences at Uppsala (Sweden)

International Courses

(The list below only concerns courses given away from France, that lasted one week at least, and where J. Serra was main lecturer).

- June 1973 : S.I.A.M. Course at Princeton University, USA.

- May 1976 : Course on Mathematical Morphology at Tokyo Noko University (Japan).
- Sept 1979 : Course on Stochastic Morphology, CSIRO, math. stat. division, Melbourne, (Australia).
- May 1981 : Medical applications of Mathematical Morphology, Institute of Psychiatry, Ac. of Medicine of the Soviet Union, Moscow.
- Aug.1982 to June 1984 : Industrial Vision by Mathematical Morphology, Univ. of Michigan, Ann Arbor (USA).
- Jan 1984 : Lectures in Mathematical Morphology, E.N.I.T. Tunis (Tunisia).
- June 1985 : Biological Morphology, Institute of Biophysics, Academia Sinica, Beijing (China).
- April 1987 : Algorithms in Mathematical Morphology, Univ. of Liverpool (U.K.).
- May 1988 : Course on Image Processing, Universitat Autònoma de Barcelona (Spain).
- June 1989 : Median and Morphological Filtering, EURASIP Course, Tampere Univ. of Technology (Finland).
- Oct-dec 1991 : Curso de morfologia matemática, Un. Politécnica de Catalunya, Spain.
- November 1992 : Curso de morfologia matemática, SIBGRAPI'92 Aguas de Lindoia, SP, Brasil.
- July 1996 : Course on Mathematical Morphology, Int. Statistical Congress, Sydney.
- September 1998 : Curso de morfologia matemática, Un. Politécnica de Valencia, Spain.
- July 1999 : Mathematical Image Processing Un. Autònoma de Barcelona, Spain.
- June 2001: First French-Nordic Summer School in Mathematics, Lake Erken, Sweden (co-organizer and main lecturer).

Other fields of interest

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| 1972-1984 | Member of the Russian Liturgical Choir of the Holy Trinity Church (Paris). |
| 1988- 2002 | Titular organist at St-Peter Church of Avon (Fontainebleau). |
| 2001- 2005 | Deputy Mayor of the city of Fontainebleau. |

Comments about Jean Serra's scientific work

Jean Serra's works survey briefly the major themes of his scientific career, described from a general perspective first, and then from a more personal point of view.

What is Mathematical Morphology ?

In the field of image processing, although matters evolve rapidly, some methodological bases, some *a priori* points of view from which one tries to understand the physical world remain unchanged. As regards Mathematical Morphology, this behaviour consists in favouring ordering relations between regions rather than their metric characteristics. In particular, it directly leads to set descriptors. Using this kind of approach, as soon as one looks beyond the mathematical layer, a certain epistemology

arises. For instance, the Matheron's axiomatics for a *granulometry* summarises the essentials of all the techniques designed for measuring size, and even of what is meant by the word "size". The same applies to several other concepts, such as that of a *connective criterion* for image segmentation [39].

The above choice requires some comments. In natural sciences such as geology, morphological description precedes the determination of laws, whereas it follows in physics. The main interest of a law comes classically from the elimination of morphological characteristics (volume, etc). However, in many areas, both the structural description and the determination of laws co-exist, and we must try to bring them together. In order to achieve this goal Mathematical Morphology has conceived descriptors [1], and has developed its theory along three ways. First, it proposes a set of operators expressing some characteristics of the medium of the image under study (morphological filters [3], connections [3][29][31], etc). Here the background is that of lattices, which allows to formalize ordering relations, suprema, etc.. and which turns out to be a common denominator to sets, to numerical, or vector, functions and to partitions. Second, Mathematical Morphology elaborates a comprehensive range of random models [20][28], and third it achieves a synthesis between texture and physical properties, at least in some fields of physics, such as mechanics [12][14][15].

Although morphological operators were initially set oriented and designed for geology and physics, they have pursued their own evolution, according to the addressed issues : a tool exists independently of its initial finality. For three decades they have been extensively used in optical or electron microscopy (cytology, histology [25], material sciences [11][14]) and in the areas where numerical images are generated, such as radiology or remote sensing. They have served also as a substitute for human vision in various industrial tasks (quality control [16], security). But new fields give rise to new theoretical issues and the boom of multi-media applications during the last decade has led to original concepts (connection [3][290][39], connected operators [26][27], geodesy [33][35]).

It is worth quoting another event, which occurred also during the nineties. The International Society for Mathematical Morphology (ISMM) was founded in 1993 in Barcelona, where the first international workshop on the subject took place. Since this time, five other symposia were held. In symbiosis with the activities of ISMM, the Pierre Soilles's « morphological digest », transmitted by Internet means, has an audience of one thousand regular readers. But the number of the users of the method is incomparably larger, and several morphological operators, such as openings, hit-or-miss, etc.. are now everyday features in image processing.

Jean Serra's voice in the choir

In 1965, in cooperation with G. Matheron, I laid the foundations of a new method, that we called Mathematical Morphology [7][8][9], and we created the "Centre de Morphologie Mathématique" within the Ecole des Mines de Paris three years later. The initial, and still valid, purpose was to link physical properties with textures, in fluid mechanics, sintering processes, etc... . First the supervisor of my PhD thesis, Georges Matheron, who was ten years older than me, gradually became me friend and my main scientific partner for thirty-five years (he departed in 2000).

A large part of my theoretical work in mathematical morphology reflects this dialogue. Most often, it acted as a counterpoint: a shared insight, or some conversation between us, suggested him new mathematical structures, and drove me to figure new operations on images, or sometimes new systems to implement them. Thus, his first texts about random sets correspond, on my part, to the hit-or-miss transform and to the first patent on the texture analyser (1965). One can easily draw up this way two parallel lists. They appear for example, just by skimming through the table of [3](1988). The order of the first ten chapters follows the chronological sequence of our works, signed either by one or the other, or by both of us.

During the last decade of the twentieth century, however, our common activity notably reduced. G. Matheron devoted his last efforts to the theory of compact lattices (1990-1996). On my part, I clearly oriented the research of the Centre de Morphologie Mathématique towards information related problems (telecom, image and video compression, data retrieval, content-based indexing). These applications led me to formulate the theory of *morphological connections on lattices* that is the core curriculum for a comprehensive class of filters and segmentations adapted to human vision.

My scientific activity during the period 1965-1985 is gathered together in the two volumes of "Image Analysis and Mathematical Morphology", Ac. Press (Vol. I, 1982 ; Vol. II, 1988). As many scientists getting on in age, I am the author, or co-author, of more than one hundred papers, and about ten books. During the last twenty years, my main contributions to mathematics and physics were the following

- The theory of morphological filtering, co-invented with G. Matheron, in 1983-1998, which constitutes an alternative to Fourier analysis [3];
- the formulation of mathematical morphology in the framework of the complete lattices (in cooperation with G. Matheron, 1984-1988) [3] [19] [29] ;
- A study of the equi-continuous functions, with a view to processing images (1991-1998) [22] [28];
- The concept of a connection, that generalizes connectivity ; it was initially set up morphological filtering (1988-2000), and that led on a theory of segmentation (2002-2004) [39];
- Some works on colour that hold on new luminance/saturation/hue systems and on a physical model for reflection/diffusion (2001-2004) [34][37][41];
- A theory of interpolation which is based on some geodesics of Hausdorff distance (1998-2000) [30][32].
- The modeling of natural phenomena, such as forest fires, by stochastic morphological operators (random spread) (2006)

As most of scientists, I am fascinated by the process that makes the world intelligible, and which, conversely, goes back from theory to an actual handling of things. That is the reason why I designed and patented image analysers, and why I launched several companies, for industrial control, for fingerprints, for quantitative microscopy, and others.

Theses supervised by J.Serra at CMM (in chronological order)

1. Pierre DELFINER : *Etude Morphologique des milieux poreux et automatisation des mesures en plaques minces*. Thèse de Docteur-Ingénieur, Université de Nancy, 24 Juin 1971. 244 p.
2. Paul JOATHON : *Représentation d'une série sédimentaire par un modèle probabiliste. Application aux processus d'Ambarzoumian et Etude de la structure de Chemery*. Thèse de Docteur-Ingénieur, Université de Nancy, 24 Juin 1971. 84 p.
3. Jean-Pierre ORFEUIL : *Etude par analyse des données de la structure de la haute atmosphère terrestre*. Thèse de Doctorat, 3^e Cycle, Univ. Paris VI, 12 Janvier 1976. 136 p.
4. Jean-Claude KLEIN : *Conception et réalisation d'une unité logique pour l'analyse quantitative d'images*. Thèse de Docteur-Ingénieur, Univ. de Nancy, 26 Avril 1976. 126 p.
5. Christian LANTUEJOL : *La squelettisation et son application aux mesures topologiques des mosaïques polycristallines*. Thèse de Docteur-Ingénieur Sciences et Techniques Minières, (option géostatistique), ENSMP, 16 Juin 1978, 83 p.
6. Fernand MEYER : *Cytologie quantitative et morphologie mathématique*. Thèse de Docteur-Ingénieur en Sciences et Techniques Minières, (option géostatistique), ENSMP, 4 Mai 1979. 195 p.
7. John J. PIRET : *Etude des effets de la coalescence des bulles sur les écoulements de gaz en lit fluidisé*. Doctorat d'Etat en Sciences Physiques, Un. Paris VI, 18 Juin 1980, 168 p.
8. Bruno LAY : *Analyse automatique des images angiofluorographiques au cours de la rétinopathie diabétique*. Thèse de Docteur-Ingénieur, en Sciences et Techniques Minières, (option géostatistique), ENSMP, 29 Juin 1983, 143 p.
9. Mostafa BENALI : *Du choix des mesures dans des procédures de reconnaissance des formes et d'analyse de texture*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 18 Décembre 1986. 189 p.
10. Françoise PRETEUX : *Description et interprétation des images par la morphologie mathématique - A : application à l'imagerie médicale*. Thèse de Doctorat d'Etat ès Sciences Mathématiques, Université Paris VI, 2 Octobre 1987. 327 p.
11. Michel GUEDJ : *Application de l'analyse d'images à la physique des roches*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 15 Décembre 1987. 185 p.

12. Mathieu BENHAMOU : *Description et simulation de réseaux de drainage par analyse d'images*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 18 Décembre 1987. 211 p.
13. Michel SCHMITT : *Des algorithmes morphologiques à l'intelligence artificielle*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 10 Février 1989. 231 p.
14. Francis FRIEDLANDER : *Le traitement morphologique d'images de cardiologie nucléaire*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 19 Décembre 1989. 145 p.
15. Luc VINCENT : *Algorithmes morphologiques à base de files d'attente et de lacets*. Extension aux graphes. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 14 Mai 1990. 301 p.
16. Serge BEUCHER : *Segmentation d'images et Morphologie Mathématique*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 5 Juin 1990. 295 p.
17. Mohamad Bassam KURDY : *Transformations morphologiques directionnelles et adaptatives : applications aux sciences des matériaux*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 27 Septembre 1990, 215 p.
18. Dominique JEULIN *Modèles morphologiques de structures aléatoires et de changement d'échelle*, Thèse de Doctorat ès Sciences Physiques, Université de Caen, 25 avril 1991, 410 p.
19. Michel GRIMAUD : *La géodésie numérique en morphologie mathématique. Application à la détection automatique de microcalcifications en mammographie numérique*. 126 p. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 18 Décembre 1991.
20. Pierre SOILLE : *Morphologie Mathématique: du relief à la dimensionalité - algorithmes et méthodes*. Thèse de Doctorat en Sciences Agronomiques, Faculté des Sciences Agronomiques de l'Université Catholique de Louvain, 28 Février 1992. 160 p.
21. Isabelle DAUTY : *Reconstruction de la géométrie 3D d'un ensemble d'objets à partir d'un petit nombre de ses projections*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 19 Décembre 1991. 137 p.
22. Michel BILODEAU : *Architecture logicielle pour processeur de morphologie mathématique*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 28 Janvier 1992. 182 p.
23. Jean-François RIVEST : *Analyse automatique d'images géologiques: application de la morphologie mathématique aux images diagrammées*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 26 Juin 1992. 198 p.
24. René PEYRARD : *Conception et mise en oeuvre d'un ASIC de morphologie mathématique à architecture programmable*. Thèse de Doctorat en Electronique, Université Blaise Pascal, Clermont-Ferrand, 8 Juillet 1992. 130 p.
25. Hongjian ZHAO : *Système expert et morphologie mathématique. Vers la résolution automatique d'applications en trajectographie*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 4 décembre 1992, 150 p.
26. Christophe GRATIN : *De la représentation des images au traitement morphologique d'images tridimensionnelles*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 22 Janvier 1993, 200 p.
27. Xuan YU : *Vision dynamique et morphologie mathématique - Application à l'analyse des scènes routières*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 28 Mai 1993, 218 p.
28. Roland BREMOND : *Modélisation de la filtration par gaz sur réseau*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 1er Octobre 1993, 158 p.
29. Hugues TALBOT : *Analyse morphologique de fibres minérales d'isolation*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 4 Octobre 1993, 266 p.
30. Ivan Ramon TEROL VILLALOBOS : *Analyse morphologique de poudres par des modèles probabilistes*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 28 Septembre 1993, 150 p.
31. Denis MARIANO GOULART : *Evaluation comparative de l'intérêt des filtres morphologiques en imagerie médicale. Application à l'imagerie par résonance magnétique et aux méthodes algébriques de tomographie*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 24 Juin 1994, 150 p.
32. Tilman JOCHEMS : *Morphologie Mathématique appliquée au contrôle industriel de pièces coulées*. Thèse de Doctorat en Morphologie Mathématique ENSMP. 20 Septembre 1994, 150 p.
33. Corinne VACHIER : *Extraction de caractéristiques, segmentation d'image et Morphologie Mathématique*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 18 Décembre 1995, 219 p.

34. Beatriz MARCOTEGUI : *Segmentation de séquences d'images en vue du codage*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 5 Avril 1996, 184 p.
35. Etienne DECENCIERE : *Restauration automatique de films anciens*. Doctorat en Morphologie Mathématique, ENSMP. 9 décembre 1997, 161 p.
36. Lothar BERGEN. *Analyse de l'ordre de profondeur des objets dans une scène par l'étude du mouvement*. Thèse de Doctorat en morphologie mathématique, ENSMP, 23 Février 1999. 165
37. Luc DECKER. *Modèles de structures aléatoires de type réaction-diffusion*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 11 Mars 1999. 191 p.
38. Frédéric ZANA. *Une approche morphologique pour les détections et bayésienne pour le recalage d'images multimodales: applications aux images rétiniennes*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 5 juillet 1999. 154 p.
39. Claire-Hélène DEMARTY. *Segmentation et structuration d'un document vidéo pour la caractérisation et l'indexation de son contenu sémantique : Application aux journaux télévisés*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 25 Janvier 2000, 232 p.
40. Marcin IWANOWSKI. *Application de la morphologie mathématique pour l'interpolation d'images numériques*. Thèse de Doctorat en Morphologie Mathématique, ENSMP / Ecole Polytechnique de Varsovie, 2000. 137 p.
41. Cristina GOMILA. *Mise en correspondance de partitions en vue du suivi d'objets*. Thèse de Doctorat en Morphologie Mathématique, ENSMP. 12 septembre 2001, 242 p.
42. Francisca ZANOQUERA. *Segmentation interactive d'images fixes et séquences vidéo basée sur des hiérarchies de partitions*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 13 décembre 2001. 197 p.
43. Valéry RISSON. *Application de la Morphologie Mathématique à l'analyse des conditions d'éclairage des images couleur*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 17 décembre 2001. 203 p.
44. Allan HANBURY. *Morphologie Mathématique sur le cercle unité avec applications aux teintes et aux textures orientées*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 25 mars 2002. 198 p.
45. Jesús ANGULO LOPEZ. *Morphologie mathématique et indexation d'images couleur. Application à la microscopie en biomédecine*. Thèse de Doctorat en Morphologie Mathématique, ENSMP, 8 Décembre 2003. 341 p.

Theses supervised by J. Serra outside CMM

1. Bernard LAGET et Michel JOURLIN : *Contribution de la morphologie directionnelle à la reconnaissance des formes*. Thèse de Doctorat ès-Sciences Mathématiques, Un. Saint-Etienne, 7 Décembre 1984, 175 p.
2. Yacine MERGHOUB : *Reconnaissance et analyse de formes sur des images de télédétection : modélisation par la morphologie mathématique*. Thèse de Doctorat 3ème Cycle Astronomie, Sciences Spatiales, Université Paul Sabatier, Toulouse. 26 Avril 1985, 167 p.
3. Frédéric SAFA : *Le speckle en imagerie cohérente : relation entre l'image cohérente et l'image incohérente; essai de filtrage morphologique*. Thèse de Doctorat, CNRS-CESR Univ. P. Sabatier, Toulouse, 30 Mai 1989. 137 p.
4. Gabrielle SORE : *Etude du réseau micro-dépressionnaire par une technique d'analyse d'images: mise au point d'une méthode pour mesurer le vieillissement cutané*. Thèse de Doctorat de l'Université Paris XI, Mention Sciences Pharmaceutiques, 14 Juin 1989. 258 p.
5. Jordi VITRIA : *Estudi sobre l'automatització de l'anàlisi visual de circuits integrats mitjançant morfologia matemàtica*. Thèse de Doctorat, Un. aut. Barcelona, 19 octobre 1990.
6. Marc VAN DROOGENBROEK : *Traitement d'images numériques au moyen d'algorithmes utilisant la morphologie mathématique et la notion d'objet: application au codage*. Thèse de Doctorat en Sciences appliquées, de l'Université Catholique de Louvain, Laboratoire de Télécommunications et Télédétection, en collaboration avec le Centre de Morphologie Mathématique, Ecole des Mines de Paris, Mai 1994, 228 p.

Texts most representative of Jean Serra's scientific work

as on 1st January 2008

- I - Books and monographs
- II - Chapters in books
- III - Patents
- IV - Courses
- V - Articles
- VI - Communications
- VII - technical reports

(the references indicated between brackets are those of the Library of School of Mines of Paris)

I - Books and monographs

Echantillonnage et estimation locale des phénomènes de transition miniers - Tomes I et II, Thèse de docteur-ingénieur, Université de Nancy, France, 25 October 1967, 699p.

Introduction à la Morphologie Mathématique, Cahiers du Centre de Morphologie Mathématique, Fascicule n° 3, Ecole des Mines de Paris 1969, 160 p.

Geometrical Probability and Biological Structures - Buffon's 200th anniversary , R.E. Miles J. Serra (eds.), Lecture Notes in Biomathematics, Springer-Verlag, 1978, 338 p.

Image Analysis and Mathematical Morphology Vol. I , Ac. Press, London, 1982, 600 p.

Éléments de théorie pour l'optique morphologique, Thèse de Doctorat d'Etat, Paris VI Univ., 1986. 191 p.

Image Analysis and Mathematical Morphology - Vol. II : Theoretical Advances, J. Serra (ed.) Academic Press, London, 1988. 411 p.

Advances in Mathematical Morphology , J. Serra (ed.) Signal Processing, Vol 16, N°4, 1989.

Proceedings Image Algebra and Morphological Image Processing III, P. Gader, E. Dougherty, J. Serra (Chairs/eds.), SPIE Conf., San Diego, Vol. 1769, 1992, 417 p.

Mathematical Morphology and its applications to Signal Processing , (Proceedings of ISSM 93), Ph. Salembier and J. Serra. (Eds), U. P.C. Barcelona, Spain, 1993.

Proceedings Image Algebra and Morphological Image Processing IV, E. Dougherty, P. Gader, J. Serra (Chairs/eds.), SPIE Conf., San Diego, Vol. 2030, 1993, 346 p.

Mathematical Morphology and its Applications to Signal Processing, J. Serra and P. Soille (eds.), Series "Computational Imaging and Vision", Kluwer, Dordrecht, 1994, 383 p.

Mathematical Morphology and its Applications to Signal Processing , Ph. Salembier and J. Serra. (Eds), Signal Processing, (Special issue) vol. 38, n°1, 1994.

II - Chapters in books

1. "Morphologie Mathématique" *Traité d'Informatique Géologique.* ", Ch. 6, Masson, Paris, 1972, 194-238. [D-582]
2. "Variations dans les arts plastiques et en géométrie ensembliste", *La création vagabonde*, J-L Binet, J. Bernard and M. Bessis (eds.) Paris, Hermann, 1986, 249-258.
3. "Mathematical Morphology for Complete Lattices" Ch. 1, "Mathematical Morphology for Boolean Lattices" Ch. 2, "Examples of Structuring Functions and Their Uses" Ch. 4, "Introduction to Morphological Filters" Ch. 5, "Strong filters and Connectivity" (with G.Matheron) Ch. 7, "The Centre and Self-dual Filtering" Ch. 8, "Dilatation and Filtering of Numerical Functions" Ch. 9, "Alternating Sequential Filters" Ch. 10, "Measurements on numerical functions" Ch. 14, "Boolean Random functions" Ch. 15, "Convexity and symmetry: Part 2" (with G. Matheron) Ch. 17 "*Image Analysis and Mathematical Morphology - Vol. II : Theoretical Advances*". J. Serra (ed.) Academic Press, London, 1988
4. "Analyse d'image et Morphologie Mathématique", *Traitement d'images en microscopie à balayage et en microanalyse par sonde électronique.* Ch. 1. ANRT, Paris, 1990, A1-A10. [D-110/90/MM]
5. "Anamorphoses and function lattices", *Mathematical Morphology in Image Processing*", Ch. 13, Ed. Dougherty (ed.), Marcel Dekker, N.Y., 1992, 483-523. [D-42/92/MM]
6. Articles "Morphologie Mathématique" et "Stéréologie", *Dictionnaire des Techniques du laboratoire de science des matériaux - Tome 2, de M à Z.* Y. Adda, Y., J.M. Dupouy, J. Philibert, Y. Quéré, (eds.) Institut National des Sciences et Techniques Nucléaires, CEA Saclay, Collection Enseignement, 1993.
7. "Image processing : what for and how to do it ? " in *fotografiando Mathematicas*, Carroggio Publ. (Barcelona) 2000, 5p.
8. "Morphological Operators for the Segmentation of Colour Images" *In Memoriam G. Matheron*, F.Meyer and M. Schmitt , Eds. Springer 2005, 32p.

III - Patents

1. Inventeur : J. Serra
Déposant : IRSID
Titre : Dispositif d'analyse de textures. Date de dépôt : 2 July 1965 (23 273), France.
Brevet déposé et accepté dans les pays suivants : Belgique, Canada, Grande-Bretagne, Japon, Suède, U.S.A.
2. Inventeur : J. Serra
Déposant : ARMINES et J. Serra.
Titre : Dispositif logique d'analyse de textures.
Date de dépôt : 10 June 1970 (70/21 322), France. Brevet déposé et accepté dans les pays suivants : Autriche, Canada, France, Allemagne, Grande-Bretagne, Japon, U.S.A.
3. Inventeurs : J. Serra et J-C. Klein
Déposant : ARMINES
Titre : Appareil destiné à analyser au moins un milieu hétérogène bi- ou tri-dimensionnel.
Date de dépôt : 11 June 1975 (75/21 925), France. Brevet déposé et accepté dans les pays suivants : France, Allemagne, Grande-Bretagne.
4. Inventeur : J. Serra
Déposant : J. Serra
Titre : Dispositif de traitement d'image, en particulier pour la simulation des feux de forêt.
Date de dépôt : 28 October 2005, INPI, Paris, France n° d'enregistrement : 0511063.

IV – Courses

1. *Cours élémentaire de statistique*, December 1964, Ecole des Mines de Nancy [C-38]
2. *Les fonctions aléatoires de dilution*, Ecole d'été 1968, Ecole des Mines de Paris [C-12]
3. *Exercices sur les variables régionalisées* (with A. Journel), Ecole d'été 1969, Ecole des Mines de Paris [C-33]
4. *Géométrie intégrale des ovoïdes et de l'anneau convexe* dec. 1971 [N-270]
5. *Lecture Notes in Mathematical Morphology*, October 1973, NSF seminar, Princeton University, 200 p [resumed in course n° 9]
6. *Fascicules de morphologie mathématique appliquée*, January 1975, Ecole des Mines de Paris [C-61]

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|---|-----------------------------------|
| Notations et mesures | (with Ph. Cauwe) |
| Erreurs de masque de mesures | (with Ph. Cauwe) |
| Variogramme (aspect structural) | (with Ph. Cauwe) |
| The Covariance Measurements | |
| La Covariance continue | (with H. Digabel) |
| La rose des directions | (with H. Digabel) |
| Reconstitution d'histogrammes de sphères | (with H. Digabel and J.-C. Klein) |
| Anisotropy fast characterization | |
| Openings calibrations and gestalt factor | |
| Estimation de la variance de l'étoile à partir d'une trame hexagonale | |
| Variances d'estimation et superposition d'échelle | |
| Le périmètre | |

7. *Trois fascicules de morphologie mathématique appliquée*, January 1975, Ecole des Mines de Paris [C-61b] :

Schémas poissonniens sur la sphère
 Etude de la répartition de la végétation sur une photo aérienne (with B.Naert)
 Angularité et rondeur

8. *Exercices de morphologie*, August 1975, Ecole des Mines de Paris [C-62]
9. *Lectures on Image Analysis by Mathematical Morphology*, July 1976, Tokyo Noko University, 225 p. [N- 475]
10. A few exercises on applied mathematical morphology, *2nd European Symposium on quantitative analysis of structures in material sciences, biology and medicine*, Caen, 4-7 October 1977 [C-69]
11. *Mathematical Morphology, Spring School*, Ecole des Mines de Paris, June 1980 [C-81]
 - Part 1 : *The hit or miss transformation*, p.1-147 [C-81-1]
 - Part 2 : *Connectivity criteria*, p.1-102 [C-81-2]
 - Part 3 : *Exercises*, p.1-48 [C-81-3]
12. *Cours de Morphologie Mathématique* (in Russian), Institut de Psychiatrie de Moscou, May 1981, 56 p. [C-116]
13. *Summer School in Mathematical Morphology* Ecole des Mines de Paris (10 fascicules),

September 1981 [C-91]

14. *Computer image analysis* (with S. Sternberg, ed.), Summer Conference, The University of Michigan-College of Engineering, August 1982 , 180 p.
15. *Cours de morphologie mathématique*, Ecole des Mines de Paris, October 1983, 358 p.[C-101]
16. *Cours de morphologie sur les filtrages*, Ecole d'été September 1984, 67 p.[C-105]
17. *Morphologie Mathématique pour les algèbres de Boole*, Ecole d'été September 1984, 28 p.[C-106]
18. *Exercices de Morphologie Mathématique*. Ecole d'Eté September 1986. 61 p. [C-120]
19. *Courses in advanced morphology* (with S. Beucher, F.Meyer, M.Schmitt) Ecole d'Eté 1987. 104 p.[C-130/87/MM]
20. *Cours de morphologie mathématique* - Première partie : morphologie mathématique euclidienne. ENSMP, 1987, 152 p.[C-152/87/MM]
21. *Cours de morphologie mathématique* - Fin de la première partie et deuxième partie : morphologie sur les treillis complets. ENSMP Ed., December 1987, 183 p.[C-154/87/MM]
22. *Lecture Notes on Morphological Filtering* (with L.Vincent) p. 1-98, Cahiers du CMM Fascicule 8, Ecole des Mines, Paris, 1989 (resumed in *Circuits Systems and Signal Processing*, 1992, vol. 11, n° 1, pp. 47-108) [C-05/89/MM]
23. *Curso de Morfologia Matematica y Analisis de Imagenes* (with Ph. Salembier) Ecole d'été 25-28 May 1992, Barcelona UAB/UPC/CMM. May 1992.[C-05/92/MM][N-18/3/92]
24. *Morphological Image Segmentation* (with S. Beucher) SPIE'S 1992 Educational Short Course, San Diego, July 1992, 53 p. [CT-A5/93/MM]
25. *Overview on Mathematical Morphology*, SIBGRAPI'92, Aguas de Lindoia, SP, Brésil (en anglais et en espagnol), (with G. Banon and J. Barrera), partie J.Serra :80 p [C-05/92/MM]
26. *Course on Mathematical Morphology and its applications to Signal Processing*, J. Serra, F. Marqués (eds.), Universitat Politecnica de Catalunya, Barcelona, Spain, May 1993. [CT-04/93/MM]
27. *Introduction à la théorie des treillis* (with J-N.Mialet) August 1993, 18 p. [N-18/93/MM]
28. *Leçon inaugurale à l'Universitat Autònoma de Barcelona* à l'occasion de son investiture de Docteur Honoris Causa. Barcelona, UAB, December 1993.39 p
29. *Manuels Micromorph pour Windows* (Co-auteurs S. Beucher, D. Gorokhovich),1-Primitive words(56 p) ; 2-opérations composées (80 p) ARMINES-TRANSVALOR 1995
30. *Morphological Image Processing : Filtering and Segmentation*. ICIP'96, EPFL Lausanne, September 1996.
31. *Cours de Morphologie Mathématique* (en trois parties et à base de deux transparents par page) Ecole des Mines, Paris, 2000.
 - a. 1^{ère} partie : *Opérateurs morphologiques*, p.1-120 [French, English and Spanish versions].
 - b. 2^{ème} partie : *Leçons illustrées sur les ensembles aléatoires*, p.1-130, [French and English versions].

- c. 3^{ème} partie : *Advances*, p. 1-210, [French and English versions].
32. *Barcelona Course* (version réduite des parties 1 et 3 du cours précédent), Ecole des Mines, Paris, 1999. [Version anglaise, 1-195 ; version espagnole,1-100]
 33. *Cours de Montpellier* (version réduite des parties 1 et 2 du cours précédent), Ecole des Mines, Paris, 1999. [Version française,1-120]
 34. *Lecture Notes on Morphological Operators* First French-Nordic Summer School in Mathematics, Lake Erken , Sweden, 26 June-03 July 2001, 150p. [C-06/01/MM]
 35. *Course on Morphological Operators* June 2001, 237p. [C-07/01/MM] repris par les cours de l'Ecole des Mines : enseignement spécialisé MP2 S1733/35 , October 2001
 36. *3-D processing and measurements* : Traitement 3D et mesures - 2 volumes. Workshop 8th ECS and Image Analysis, Bordeaux, 3 September 2001. 45 p + 10 transp. [C-10-1&2/01/MM].
 37. *Course on Random sets and functions*: enseignement spécialisé MP8 S1634 de l'Ecole des Mines de Paris 200p. March 2002 [C-03/02/MM]
 38. *Espaces couleur adaptés au traitement d'image* Ecole de printemps Images numériques couleur (18-21 March 2003, Dijon) 18p.[C-03/03/MM]
 39. *représentations de la couleur en coordonnées polaires adaptés au traitement d'image* Ecole d'hiver Images numériques couleur (12- 15 January 2005, Lille) 29p. [C-01/05/MM].

V - Articles

1. "Règles d'échantillonnage des minerais lorrains en place", *Bulletin Technique des Mines de Fer*, No 84, 1966, 169-182. [D-30]
2. "Remarques sur une lame mince de minerai lorrain ". *Bull. du B.R.G.M.* N°6, Déc. 1967, 1-36. [D-59]
3. "Buts et réalisation de l'analyseur de textures ". *Revue de l'Industrie Minérale*, Vol. 49, Sept. 1967, 1-14. [D-188]
4. "Un critère nouveau de découverte de structures : le variogramme", *Sciences de la Terre*, tome XII, 1967, pp. 275-299. [D-145]
5. "Morphologie Mathématique et granulométries en place ". (with A. Haas and G. Matheron). *Annales des Mines - Part I* : Vol. XI, Nov. 1967, 736-753 - Part II : Vol. XII, Déc. 1967, 768-782. [D-109]
6. "Les structures gigognes : Morphologie Mathématique et interprétation métallogénique", *Mineralium Deposita*, 1968, No 3, 135-154 [D-177]
7. "Morphologie Mathématique et genèse des concrétions carbonatées des minerais de fer de Lorraine", *Sedimentology*, 10, 1968, 183-208. [D-125]
8. "Use of covariograms for dendrite arm spacing measurements ", *Trans. of A.I.M.E.*, Vol. 245, Janv. 1969, 55-59. [D-211]
9. "Morphologie Mathématique et Sylviculture", 3rd Conference, Advisory Group of Forest Statisticians, Jouy-en-Josas, 7-11 Sept. 1970 - *Publications INRA 73-2*, 287-307. [D-581]
10. "L'analyseur de textures" *Sciences de la terre* Vol. XVI, 1971, 275-289.
11. "Le concept de granulométrie", *Revue de l'Industrie Minérale* April 1971, 262-267 [D-332]
12. "Lois de l'homogénéisation linéaire dans les parcs de minerais" (with L. Ivanier) *CDS, Circulaire d'Information Technique*, May 1972, No 3, pp. 647-667 (identique à la note NI 51)
13. "Stereology and structuring elements", *J. of Microscopy*, Vol. 95, Pt 1, 1972, 93-103. [D-388]
14. "The texture analyzer", (with J-C.Klein), *J. of Microscopy*, Vol. 95, Pt 2, 1972, 349-356. [D-387]
15. "Mathematical Morphology applied to fibre composite materials", (with G. Verchery) *Fibre Science and Technology*, Vol. 6, 1973,141-158 [D-698].
16. "Etude de la distribution spatiale des ovogonies dans l'ovaire d'un embryon de ratte à l'aide de l'analyseur de textures", (with J. Digabel, P. Mauleon and C. Mariana), *Annales de Biologie Animale*, Vol.13, N° hors-série, 1973. Publications INRA 73-2, 115-125 [D-716].
17. "Das Problem der Auflösung und der durch Messlogik bedingten Fehler im Rahmen der quantitative Bildanalyse", (with W. Muller). *LEITZ Mitteilungen*, Suppl. 1-4, June 1973, 125-136 [D-728].
18. "In quantitative Image Analysis, the Problem of resolution and errors caused by measuring logic" (with W. Muller), *LEITZ Mitteilungen*, Suppl. 1-4, Jun 1973, 125-136 (english version)

of the previous paper).

19. "Theoretische Grundlagen des LEITZ Texture Analyse System", *LEITZ Mitteilungen*, Suppl. 1-4, June 1973,125-136 [D-729].
20. "Theoretical bases of the LEITZ Texture Analysing System", *LEITZ Mitteilungen*, Suppl. 1-4, June 1973,125-136 (english version of the previous paper).
21. "Pour reconnaître les inclusions : chartes ou Analyseur de Textures ?" (with D.Jeulin), *Memoires scientifiques, revue de Metallurgie*, October 1975, 745-751[D-967]
22. " LEITZ – TAS Grundlagen ", (with Ph. Cauwe and W. Müller) *LEITZ Mitteilungen*, sept 1975, 10p. [D-729b].
23. "Présentation de la Morphologie Mathématique", *Annales des Mines*, Nov. 1975 Techniques Probabilistes dans l'Industrie, 111-122 [D-918].
24. "La quantification en pétrographie", (with E.N. Kolomenski), *Bull. de l'Association Internationale de Géologie de l'Ingénieur*, N° 13, Krefeld, June 1976, 83-87.[D-999-A].
25. "Trois études de Morphologie Mathématique en géologie de l'Ingénieur", (with E.N. Kolomenski) *Bull. de l'Association Internationale de Géologie de l'Ingénieur*, N° 13, Krefeld, June 1976, 89-97.[D-999-B].
26. "Erreurs dues aux masques de mesure en métallographie quantitative", (with T. Hersant, P. Parniere), *Mémoires Scientifiques de la Société Française de Métallurgie*, Oct. 76.[D-1068].
27. "Morphometric analysis of neurons in different depths of the cat's brain cortex after hypoxia", (with O. Hunziker, U. Schultz and Ch. Walliser), *Nat. Bur. Stand. Spec. Publ. N° 431* Washington D.C.,1976, 203-206[D-1144].
28. "Stochastic Models in Stereology: Strengths and weaknesses" *Nat. Bur. Stand. Spec. Publ. N° 431* Washington D.C.,1976[D-1000].
29. "Automatic recognition of non-metallic stringers in steel ". (with D. Jeulin), *Nat. Bur. Stand. Spec. Publ. N° 431* Washington D.C.,1976 [D-1088].
30. "The texture analyser measurements and physical anisotropy of tropical woods ". (with A. Mariaux and O. Peray). *Nat. Bur. Stand. Spec. Publ. N° 431* Washington D.C.,1976 [D-1001].
31. "Essai d'anatomie quantitative de quelques bois à l'analyseur de textures", (with P. Gueneau and A. Mariaux). *Bois et Forêts des Tropiques*, n°171, Jan-Fev. 1977, 17-30 [D-1006].
32. "Statistique multidimensionnelle sur les données morphologiques en métallurgie: cas des agglomérés de minerais de fer " (with D. Jeulin and J-L. Letailleur), *Mémoires Scientifiques de la Société Française de Métallurgie*, revue de Metallurgie, Aout-sept 1978, 503-512[D-1069].
33. "Présentation de la Morphologie Mathématique" *La Documentation Française*, n° spécial 33-34 December 1977, 111-122 [D-1162] [reprise de l'article 23].
34. "L'analyse quantitative des images", *La Recherche*, n°87, March 1978, 247-256.
35. "L'analyse des images biomédicales par la Morphologie Mathématique", *Pathologie Biologie*, April 1979, Vol. 27, N° 4, 205-207.
36. "Mathematische Morphologie und die Petrographie", (with E.N. Kolomenski, German translation of n° 24 and 25), *News Letters in Stereology*, G. Ondracek (Ed.) May 79, 56-105. [D-1181b].

37. "The use of the texture analyser to study sinter structure", (with D. Jeulin and A. Greco), *J. of Micr.*, July 1979, Vol. 116, N° 2, 199-211 [D-1181].
38. "Quantitative Image Analysis", (with R. Nawrath), *Microscopica Acta*, Vol. 82, N°2, Sept. 79, Part I, 101-111 [D-1306] ; Part II, 113-128 [D-1137].
39. "Boolean Model and Random Sets", *Computer Graphics and Image Processing* 1980, Vol. 12, 99-126 [D-1360].
40. "Digitalization" *Mikroskopie*, Wien, 37 (Suppl.), 1980, 109-118 [D-1643].
41. "Mathematics of digitization of binary images" *Lecture Notes in Medical Informatics* No 17, Springer Verlag, 1982, pp. 284-293. [D-2119]
42. "L'Analyseur de textures", (with K. Heitman and J.Ossard) *Annales des Mines*, Jan. 1983, 100-103.
43. "Images et Morphologie Mathématique", *La Recherche*, n° 144, May 1983, 722-732 [D-1684].
44. "Descriptors of flatness and roughness", *J. of Micr.*, June 1984, Vol. 134, N° 3, 227-243 [D-2043]
45. "Square to hexagonal lattices conversion", (with B. Laÿ). *Signal Processing* 9, 1985, 1-13. [D-2129]
46. "Contacts in random packing of spheres", (with Y. Pomeau) *J. of Micr.*, Vol. 138, N°2, May 1985, 179-185. [D-2149]
47. "Introduction to Mathematical Morphology", *Computer Vision, Graphics, and Image Processing*, Sept. 1986, Vol. 35, N°3, 283-305. [D-03/86/MM]
48. "Comparaison des Saint Jérôme de Georges de La Tour ". (with X. Duclairoir, R. Rouquet, Ch. de Couessin) *J. Micr. et Spectr. Electron*, February 1987, Vol. 12, N°1, 95-99. [D-31/87/MM]
49. "Morphological optics ", *J. of Micr.*, January 1987, Vol. 145, N°1, 1-22. [D-37/87/MM]
50. "Contourage automatique des angiocardioscintigraphies par traitement morphologique", (with F. Friedlander, J.L. Barat, F. Meyer, F. Prêteux and D. Ducassou), *J. de Biophysique et de Biomécanique*, Vol. 11, suppl.II, 1987, pp. 71-73. [D-103/87/MM]
51. "Cutaneous aging and Mathematical Morphology ", (with J.P. Nominé, L. Vincent, F. Meyer, J.P. Escande, J. Arnaud-Battandier) *Acta Stereologica*, 1987, Vol. 6, Pt III, 895-900. [D-83/87/MM]
52. "Boolean random functions", *Acta Stereologica*, 1987, Vol. 6, Pt III, 325-330. [D-95/87/MM]
53. "Recent developments in mathematical morphology", *Acta Stereologica*, 1987, Vol. 6, Pt III, 643-650. [D-96/87/MM]
54. Editorial, *Signal Processing*. Special Issue on Mathematical Morphology, April 1989, Vol. 16, n° 4, pp. 297-301
55. "Contrasts and activity lattice ", (with F. Meyer) *Signal Processing - Special Issue on Mathematical Morphology*, April 1989, Vol. 16, N°4, pp. 303-317. [D-169/89/MM]
56. "Filters : from theory to practice" (with F. Meyer), *Acta Stereologica*, 1989, 8/2, 503-508 [D-47/90/MM]

57. "Boolean random functions", *J. of Micr.*, Vol. 156, N°1, October 1989, 41-63. [D-206/89/MM]
58. "An Overview of Morphological filtering ". (with L. Vincent). *IEEE Trans. on Circuits, Systems and Signal Processing*, Vol. 11, N°1, 1992, 47-108. [D-01/92/MM] (Close to *Morphological filtering*, Fasc. 8, Cahiers du CMM, L-60/89/MM)
59. "Dimensionality in image analysis" (with J.F. Rivest, J-F and P. Soille), *Journal of Visual Communication and Image Representation, Special Issue on Mathematical Morphology*, June 1992, vol. 3, n° 2, 137-146. [D-11/92/MM]
60. "Convergence, Continuity, and Iteration in Mathematical Morphology ". (with H.J.A.M. Heijmans), *Journal of Visual Communication and Image Representation*, Vol. 3, N°1, March 1992, 84-102. [D-26/92/MM]
61. "Morphological filtering: an overview", *Mathematical Morphology and its Applications to Signal Processing*, Signal Processing, Ph. Salembier and J. Serra (Eds) Special issue on Workshop Barcelona'93, vol. 38, n°1, 1994, 3-11.
62. "The Tailor Problem", (with N. Parès) *Advances in Pattern Recognition and Applications* , Casacuberta F. and Sanfeliu A. (eds.) World Scientific, 1994, 23-30. [D-48/92/MM]
63. "Quantification of interstitial chronic renal damage by means of texture analysis" (with F. Moresco, D. Seron, J. Vitria, M.F. Colomé-Serra, N Parès) *Kidney Int.* Vol.46,1994,1721-1727 (*Price of the best paper of the year in Kidney International*) .
64. "Theoretical aspects of morphological filters by reconstruction", (with J. Crespo and R. W. Schafer) , *Signal Processing* ,1995, Vol. 47, No 2, 201-225 .
65. "Flat zones filtering, connected operators, and filters by reconstruction" (with Ph. Salembier). *IEEE Transactions on Image Processing*. August 1995, vol. 4, n° 8, 1153-1160 .
66. "Morphological image segmentation", *Acta Stereologica* vol 14, n° 2, 1995, 99-111.
67. "Review of "Morphological Operators" from H. Heijmans" *SIAM Review* vol 38, n° 1, March 1996, 178-179 [D-153/96/MM]
68. "Use of Mathematical Morphology in industrial control", *Microscopy, Microanalysis, Microstructures*, 20th Anniversary of the French Section of the ISS, Vol. 7, No 5-6, October/December 1996, 297-310 [D-25/97/MM].
69. "Automatic image analysis today" (with J.L. Chermant) *Microscopy, Microanalysis, Microstructures*, 20th Anniversary of the French Section of the ISS, Vol. 7, No 5-6, October/December 1996, 279-288 [D-27/97/MM].
70. "Equicontinuous random functions" *Journal of Electronic Imaging - Special Issue on Random Models in Imaging*, 6, 1. January 1997, 7-15 [D-03/97/MM].
71. "Mathematical Morphology: A historical overview", (with J.L. Chermant) *Acta Stereologica*, 16, 3. 1997, 156-165 [D-55/97/MM]
72. "The flat zone approach: A general low-level region merging segmentation method", (with J. Crespo, R.W. Schafer, Ch. Gratin, F. Meyer) *Signal Processing*, 62, 1.1997, 37-60 [D-53/97/MM] .
73. "Morphological image enlargements " (with A. Albiol). *Journal of Visual Communication and Image Representation*, 1997, 8(4) 367-383 [D-03/98/MM].

74. "Connectivity on complete lattices", *Journal of Mathematical Imaging and Vision*, 1998. 9(3), 231-251 [D-36/98/MM].
75. "Connections for sets and functions", *Fundamenta Informaticae*, Vol 41, 1-2 Jan 2000 , 147-186 [D-01/00/MM].
76. "Quantitative descriptors of the lymphocytes" (with J. Angulo and G. Flandrin). *Analytical Cellular Pathology*, 2001. 22(1/2): pp. 69-70 [D-17/01/MM].
77. "Geodesy and connectivity in lattices" (with Ch. Ronse) *Fundamenta Informaticae*, Vol 46, issue 4, sept. 2001. 46(4): pp. 349-395. [D-25/01/MM].
78. "Mathematical Morphology in the L*a*b* space (with Allan Hanbury) *Image Anal Stereol* 2001 ; 20 (Suppl 1): 48-53. [D- 33/01/MM]
79. "Morphological Operators on the Unit Circle" (with Allan Hanbury) *IEEE Transactions on Image Processing*, 10(12): pp 1842-1850 dec.2001, [D-41/01/MM].
80. "Morphological descriptions using three-dimensional wavefronts" *Image Analysis & Stereology - Special issue "Looking at Measurement from Various Operations of Image Analysis", dedicated to 8th ECS, Bordeaux, sept. 2001, 2002. 21(Suppl 1): p. S13-S21. [D-26/02/MM].*
81. "Mathematical Morphology in the CIELAB space", (with A. Hanbury) 8 ECS and Image Analysis, Bordeaux, Sept. 2001. *Image Anal. Stereol.*, 2002. **21**(3): p. 201-206. [D-25/02/MM].
82. "Automatic analysis of DNA microarray images using mathematical morphology" (with Jesus Angulo), *Bioinformatics* vol. 19 n0 5, 2003 pp. 553-562 [D-01/03/MM]
83. "Morphological quantification of aortic calcification from low magnification images" (with Jesús Angulo, Thao Nguyen-Khoa, Ziad A Massy, Tilman Drüeke). *Image Anal. Stereol.*, 2003. **22**: pp. 81-89. [D-07/03/MM].
84. "Connexions et segmentation d'image". *Traitement du Signal, Numéro spécial : " Le traitement du signal à l'aube du XXIe siècle*, 2003. **20**(3): pp. 243-254. [D-17/03/MM].
85. "Viscous Lattices" *Journal of Mathematical Imaging and Vision*, **22** : pp.269-282, 2005.
86. "Segmentación de Imágenes en Color Utilizando Histogramas Bi-Variables en Espacios Color Polares Luminancias/Saturación/Matiz" (with Jesús Angulo), *Computación y Sistemas*, Vol. 8 n° 4, pp. 303-317. April-June 2005,
87. "A Lattice Approach to Image Segmentation " *J. of Mathematical Imaging and Vision*, 24: 83-130, 2006
88. "Modelling and segmentation of colour images in polar representation" (with Jesús Angulo), *Image and Vision Computing* 25: 475-495, 2007
89. "Advances in Mathematical Morphology: Segmentation" *Advances in Imaging and Electron physics*, Vol. 150, 185-217, 2008

VI - Communications

1. "Les variables régionalisées - Le variogramme, outil de connaissance", *Conférence IRSID*, 2 October 1964 [D-187].
2. "L'analyse des textures par la géométrie aléatoire". *Comptes-rendus du comité scientifique de l'IRSID*, Nov. 1965, 7p. [D-186]
3. "Introducción a la geostatística", (traducción española de la nota NI 22) *Conférence à la société de l'industrie minérale du Chili*, APRIL 1969 [D-189]
4. Maréchal A., Serra J. "Random kriging". *Colloquium on Geostatistics*, Lawrence, Kansas, June 1970, 91-111 [D-305]
5. "Quantification of lateritic type structures : Application to their estimation", *Symposium on Decision-making in the Mineral Industry* Montréal, June 1970 , *CIM Special* Vol. n° 12, 170-173 [D-306].
6. Raceck R., Lesoult G., Serra J. "Etude morphologique de l'eutectique lamellaire CD-SN", *Journées Métallurgiques d'Automne*, 1970 [D-402]
7. "Analyse des correspondances entre la morphologie mathématique du réseau poreux de roches volcaniques, et certaines de leurs propriétés physiques " (with E.N. Kolomenski, V. Ladiguine and J-P. Orfeuill), *Proc. of the Int. Symp. RILEM-IUPAC Pore Structures and Properties of Materials*, Prague, 18-21 Sept. 1973. [D-724]
8. "Facteurs de forme et granulométries in situ", *Proc. of the Int. Symp. RILEM-IUPAC Pore Structures and Properties of Materials*, Prague, 18-21 Sept. 1973. [D-725]
9. "Liens entre la morphologie des enrobés bitumineux, leur déformation par orniérage et leur formule de fabrication" (with F. Georges, J-C. Klein and R. Sauterey), *Proc. of the Int. Symp. RILEM-IUPAC Pore Structures and Properties of Materials*, Prague, 18-21 Sept. 1973.
10. Laws of linear homogenisation in ore stockyards (with Ch. Huijbregts and I. Ivanier) September 1974. 42 p. (*11th Int. Mineral Processing Congress*, Cagliari, 1975).
11. "Reconnaissance automatique de caractères manuscrits" (with A. Chapelle, G. Lorette and J.P. Requier) *Proc. Congrès AFCET/IRIA, Reconnaissance des Formes et Traitement des Images*, Chatenay-Malabry, 21-23 February 1978, 560-567 [D-104/90/MM]
12. "En matière d'introduction ". (with R.E. Miles). *Geometrical Probability & Geometrical Structures*, R.E. Miles and J. Serra (eds), Lecture Notes in Biomathematics, n°23, Springer-Verlag, Berlin, 1978. 3-28. [D-1076-A]
13. "One, two, three... infinity", *Geometrical Probability & Geometrical Structures*, R.E. Miles and J. Serra (eds), Lecture Notes in Biomathematics, n°23, Springer-Verlag, Berlin, 1978, 137-152.
14. "Principles, Criteria and algorithms in Mathematical Morphology ", *Issues in Digital Image Processing - NATO A.S.I. Series*. R.M. Haralick and J-C. Simon (eds) , Sijthoff and Nordhoff, Pays-Bas, 1980, 73-105.
15. "Shapes and Patterns of Microstructures considered as Grey-tone Functions" (with S. Beucher) , *Proc. 3rd Europ. Symposium on Stereology* , Ljubljana, June 22-26, 1981, *Stereol. Jugosl. 1981*, 3/ Suppl. I, 43-64.

16. "Automatic analysis of microradiographs: porosity of humeral cortical bone during aging" (with C.Bergot, F.Prêteux, A.S. Mark, A.M. Laval-Jeantet), *Congrès de Radiologie de Jérusalem*, Israël, March 1982. [D-1739]
17. "Digital Morphology in the 3-D Space", *Proc. ICASSP 82, IEEE Intern. Conf. on Acoustics, Speech and Signal Processing*, Paris, 3-5 May 1982, 843-845. [D-1750]
18. "Image segmentation or image understanding" *Proc. ICASSP 82, IEEE Intern. Conf. on Acoustics, Speech and Signal Processing*, Paris, 3-5 May 1982, 1176-1178. [D-1751]
19. "M-Filters" (with C. Lantuéjoul) *Proc. ICASSP 82, IEEE Intern. Conf. on Acoustics, Speech and Signal Processing*, Paris, 3-5 May 1982, 2063-2066. [D-1754]
20. "Méthodes morphologiques de transformations des images biologiques" (with F. Meyer) *13ème Congrès des Anatomo-Pathologistes de Langue Française*, Rouen, 25-29 May 1983 - Proc. Tome 2, 2-19. [D-1875]
21. "Contacts between balls calculated from plane sections". *Proc. 6th International Congress for Stereology*, Gainesville, Florida, USA, 9-14 October 1983. In *Acta Stereologica*, Vol 2 Suppl. 1, Dec. 1983, pp. 29-34. [D-1956][repris dans Article §§]
22. "Aide automatique à la compréhension des images en télédétection : modélisation des caractères morphologiques de la texture" (with G. Flouzat and Y. Merghoub), *Proc. Premier Colloque Image - Traitement, Synthèse, Technologie et Applications*, Biarritz, May 1984. Tome 2, 735-740. [D-1975]
23. "Structures syntaxiques en morphologie mathématique", *Proc. Premier Colloque Image - Traitement, Synthèse, Technologie et Applications*, Biarritz, May 1984. Tome 1, 393-402. [D-1977]
24. "Principles of mathematical morphology", *Quantitative Analysis of Mineral and Energy Resources*, Proceedings NATO Asi Series C, Vol. 223, Geology Congress, il Ciocco, Italie, June 1986, 237-254. [D-98/87/MM]
25. "Morphological Optics" *Fourth International Conference on Image Analysis and Processing*, Cefalu, Sicily, Italy, Sept. 1987. June 1986. 16 p. [N-44/87/MM] [repris dans Article 49]
26. "From Mathematical Morphology to Artificial Intelligence" *Proc. Congrès IEEE-AFCET*, Paris, Oct. 1986.[D-2186]
27. "Traitement automatique des angiocardioscintigraphies par la morphologie mathématique" (with F. Friedlander, J.L. Barat, F. Meyer, F. Prêteux, D. Ducassout) *Livre des Résumés du Congrès sur la Recherche en Imagerie Médicale*, Paris, 18-20 March 1987.[D-168/87/MM]
28. "Insertion de l'analyse d'image en robotique", *Onzième Colloque GRETSI* Nice June 1987. [D-38/87/MM]
29. "Analyse d'image et microscopie électronique " Journées du Groupement "Microanalyse et Microscopie Electronique à Balayage" (ANRT) December 1988 10 p. [N-23/88/MM]
30. "Toggle mappings ", *From pixels to features*, J.C. Simon (ed.) North-Holland, Elsevier, Amsterdam, 1989, 61-72. [D-168/89/MM]
31. "The growth property in signal processing : strength and weaknesses" *EUPSICO 90 - 5th European Signal Processing Conference*, Barcelona, September 18-21, 1990, p. 24 [D-111/90/MM]

32. "The links: definition and properties", *SPIE VCIP'90 Conf.*, Vol. 1360, 1-4 Oct. 1990, Lausanne. [D-138/90/MM]
33. "Lipschitz Lattices and Numerical Morphology" *SPIE Conf.*, Vol. 1410, San Diego'91, 1991, 12 p.
34. "Dimensional measurements and operators in mathematical morphology" (with P. Soille, J.F.Rivest), *Proc. SPIE "Image Science and Technology"*, San Jose, California, Feb. 9-14, 1992. [D-10/92/MM]
35. "Skeleton decompositions", *SPIE Conf.*, Vol. 1769, San Diego'92, 1992, 376-386. [D-34/92/MM]
36. "Equicontinuous functions: a model for Mathematical Morphology", *SPIE Conf.*, Vol. 1769 San Diego'92, 1992, 252-263. [D-36/92/MM]
37. "Connectivity filters for image sequences", (Co-auteurs M. Pardas, L.Torres) *SPIE Conf.*, Vol. 1769, San Diego'92, 1992, 318-329. [D-44/92/MM]
38. "Tailleur: El problema del sastre" (with N. Parès) *Proc. V Simposium Nacional de Reconocimiento de Formas y Analisis de Imágenes*, Valencia, 21-25 de Septiembre 1992, 23-30 [D-48/92/MM] .
39. "Evaluación por granulometría en niveles de gris del daño crónico del intersticio renal" (with D. Seron, M. Colomé-Serra, F. Moreso, J. Griñó, J.Alsina,) *Proc. V Simposium Nacional de Reconocimiento de Formas y Analisis de Imágenes*, Valencia, 21-25 de Septiembre 1992, 71-78 [D-48/92/MM] .
40. "Morphological Multiscale Image Segmentation", (with Ph. Salembier), *Visual Communications and Image Processing*, Boston, 1992, Proc. SPIE, vol. 1818 620-631. [D-45/92/MM]
41. "Utility of grey level granulometry to measure renal interstitial chronic damage" (with M-F. Colome-Serra, D. Seron, F. Moreso, M. Carrera, J-M. Grino), *In Proc. of IEEE Engineering in Medicine and Biology Society*, Paris, Oct. 29-Nov. 1, 1992, vol. 14, Part 5, 1934-1935.
42. "Edge versus Contrast Estimation of Morphological Filters" (with P. Salembier , J.A. Bangham) *IEEE International Conference on Acoustics, Speech & Signal Processing*, ICASSP'93, volume V, pages 45-49, Mineapolis (MI), USA, April 1993.
43. "Image segmentation using connected filters" (with J. Crespo and R W. Schafer), *Mathematical Morphology and its Applications to Signal Processing*, Proc. Int. Workshop, UPC/ENSMP/EURASIP, Ph. Salembier and J. Serra J. (Eds) Universitat Politecnica de Catalunya, Barcelona, Spain, May 12-14, 1993, 52-57.
44. "Anamorphoses and function lattices", *Mathematical Morphology and its Applications to Signal Processing*, Proc. Int. Workshop, UPC/ENSMP/EURASIP, Ph. Salembier and J. Serra J. (Eds) Universitat Politecnica de Catalunya, Barcelona, Spain, May 12-14, 1993, 186-194. (identical to §§§)
45. "Connected operators and pyramids" (with Ph. Salembier), *Image Algebra and Morphological Image Processing IV*. E. R. Dougherty, P. D.Gader, J. Serra, (eds.) , 12-13 July 1993, San Diego, California, Proc. SPIE vol. 2030, 65-76.
46. "Anamorphoses and function lattices", *Image Algebra and Morphological Image Processing IV*. E. R. Dougherty, P. D.Gader, J. Serra, (eds.), 12-13 July 1993, San Diego, California, Proc. SPIE vol. 2030, 2-11.
47. "Les treillis de fonctions équicontinues", in *Colloque Gédéon, Géométrie Discrète en*

- Imagerie, Fondements et Applications*. 1993. Université de Strasbourg, 20-21 September 1993. Conférence invitée, 192-227. [D-28/93/MM].
48. "Morphological pyramids for image coding" (with J. Crespo), *SPIE, Visual Communications and Image Processing*, Cambridge, MA, November 1993.
 49. "Opérateurs connexes et pyramides" (with Ph. Salembier), *In Proc. 9ème Congrès RFIA "Reconnaissance des Formes et Intelligence Artificielle"* AFCET/AFIA, Paris, January 1994, Vol. 1, 243-254.
 50. "Présentation de la Morphologie Mathématique et de ses récents développements" *RecPad'94*, Lisbon, Portugal, March 1994, 10 p. [N-07/94/MM]
 51. "The "Centre de Morphologie Mathématique": an overview", *Mathematical Morphology and its applications to Image Processing*, J. Serra and P. Soille (Eds.), Dordrecht: Kluwer Acad. Publ., 1994, 369-374.
 52. "A sampling approach based on equicontinuity", *Mathematical Morphology and its applications to Image Processing*, J. Serra and P. Soille (Eds.), Dordrecht: Kluwer Acad. Publ., 1994, 117-124
 53. "Graph-based morphological filtering and segmentation"(with J. Crespo and R. W. Schafer), *Proc. VI Spanish Symposium on Pattern Recognition and Image Analysis*, Cordoba, April 1995, 80-87. (*Cette communication a remporté le prix (unique) du symposium*).
 54. "Interactions entre structures des matériaux et modèles aléatoires", *Actes des Journées d'Etudes INRP/CNAM, "Images numériques dans l'enseignement des sciences"*, Paris 15 and 16 June 1995, 1996, 71-75 [D-07/97/MM].
 55. "Equicontinuous random functions", *Advances in theory and applications of random sets* D. Jeulin (ed.). Singapore: World Scientific Publishing Company, 67-84 [D-10/97/MM].
 56. "Connectivity on complete lattices", *Mathematical Morphology and its Applications to Image and Signal Processing*, P. Maragos, R.W. Schafer, M.A. Butt (Eds.), 1996, Kluwer Ac. Publ, 81-96 [D-71/96/MM].
 57. "Industrial control by vision", Invited Conference, *Proc. Interface'96: Graph-Image-Vision, 28th Symposium on the Interface of Computing Science and Statistics*, Sydney, Australia, July 1996, 3-11 [D-34/97/MM].
 58. "Detection of local defects in old motion pictures ", (with E. Decencièrre). *VII National Symposium on Pattern Recognition and Image Analysis*, Universitat Autònoma de Barcelona, Spain, 23-25 April 1997, 145-150 [D-14/97/MM].
 59. "Application of the morphologic geodesic reconstruction to image sequence analysis", (with E. Decencièrre Ferrandièrre and S. Marshall), *IEE Proceedings : Vision, Image and Signal Processing*, 1997, 144(6) 339-344 [D-05/98/MM].
 60. "Cube, cube-octahedron or rhombododecahedron as bases for 3-D shape descriptions" (*Proc. of IWVF3*, May 1997, Capri) *Advances in Visual Form Analysis*, C. Arcelli , L.P. Cordella, and G. Sanniti di Baja, Eds. World Scientific 1997, 502-519 [D-57/97/MM]
 61. "Hausdorff distances and interpolations". *Mathematical morphology and its Applications to Image and Signal Processing (Proc. ISMM'98)*, H.Heijmans and J. Roerdink Edts, Kluwer 1998,107-114.
 62. "Morphological Interpolation and Colour Images", (with M. Iwanowski), *Proc. International Conference on Image Processing ICIAP'99 Venice*, sept 1999 [D-18/99/MM].

63. "Set connections and discrete filtering" (*Proc. DGCI 1999 Lecture Notes in Computer Science*, Vol. 1568, G. Bertrand, M. Couprie and L Perroton (eds.), Springer, 1999, pp 191-206.
64. "The Morphological-affine Object Deformation", (with M. Iwanowski) *Mathematical morphology and its Applications to Image and Signal Processing (Proc. ISMM'2000)*, J. Goutsias, L. Vincent, D.S. Bloomberg, Edts Kluwer 2000, pp. 81-90 [D-17/00/MM].
65. "Morphological merging of multidimensional data" (with M.Mlynarczuk) *Proc. STERMA'2000*, Cracow, Sept. 2000, pp.385-390 et 455.
66. "Is pattern recognition a physical science ? " in *15th International Conference on Pattern Recognition, ICPR 2000*. 2000. Barcelona, September 3-7, 2000., A. Sanfeliu, et al., Eds. Invited conference. **3** p. 33-40. [D-20/00/MM]
67. "Morphological texture study of the chromatin in lymphoid cell" (with J. Angulo). in *Proc. SNRFAI'2001 : IX Spanish Symposium on Pattern Recognition and Image Processing. 2001*. Castellón, Spain, 16-18 May 2001. J. Salvador Sanchez and F. Pla, Eds. p. II-423-428 [D-18/01/MM].
68. "Mathematical Morphology in the HLS colour space" in *12th BMVC, British Machine Vision Conference*,. 2001. Manchester, 10-13 September 2001: BMVA., T. Cootes and C. Taylor, Eds. p. II-451-460. [D-42/01/MM]
69. "Haematological cytology image analysis and semantic indexing : towards a global approach" (with J. Angulo and G. Flandrin). *Proc. XIVth ISDQP (International Congress of the International Society of Diagnostic Quantitative Pathology) : Diagnostic Molecular Pathology: From Genomics to Proteomics*. Oviedo, Spain, September 26-29, 2001., A. Sampedro, Ed. Special Presentation Abstract. page 40. [D-19/01/MM].
70. "Aplicacion de la morfologia matematica a la telemedicina y a la biotecnologia: caracterizacion morfologica de células de la sangre y analisis de DNA microarrays", (with Jesus Angulo), Invited lecture *Reconocimiento de patrones CIARP 2002* J.L Diaz de Leon Santiago y C. Yañes Marques (Eds) CIC, Instituto Politecnico Nacional, México D.F. nov 18-22, 2002, 39-50. [D-14/02/MM].
71. "Connexions et segmentation d'image" Conférence aux journées de la SEE sur l'analyse d'image à l'aube du XXIème siècle. Paris , 27-28 March 2002
72. "The birth of Mathematical Morphology" (with G. Matheron), in *Mathematical Morphology*, H. Talbot, R. Beare, Edts Proc. ISMM 2002, CSIRO Sydney 2002 pp. 1-16.
73. "Viscous lattices" (*Proc. ISMM 2002*), *Mathematical Morphology*, H. Talbot, R. Beare, Edts. CSIRO Sydney 2002, pp 79-90.
74. "Morphological colour size distribution for image classification and retrieval" (with J. Angulo) *Proc. ACVIS 2002*, Ghent, Belgium, September 9-11, 2002.
75. "Connection, Image Segmentation and Filtering" (invited lecture) *CIC 2002, Avances en Ciencias de la computacion e Ingenieria de Computo*, J;H;Sossa Azuela, C. Aguilar Ibañez, M. Alavarado Mentado y A. Gelbukh (Eds) México D.F. nov 25-29, 2002 p. 37-50. [D-15/02/MM]
76. "Segmentación de imágenes en color utilizando histogramas bi-variables en espacios color en coordonadas polares (with Jesus Angulo), Invited lecture *Reconocimiento de patrones CIARP 2003* J.L Diaz de Leon Santiago y C. Yañes Marques (Eds) CIC, Instituto Politecnico Nacional, México D.F. nov 18-22, 2002, 39-50. [D-14/02/MM].

77. "Colour Image Analysis in 3-D Polar coordinates" (with A. Hanbury) DAGM congress, 8p. 2003 [N- 08/03/MM]
78. "Image segmentation", in *ICIP 2003 IEEE International Conference on Image Processing*, Barcelona, Spain, September 14-17, 2003. p. I. 345-348. [D-15/03/MM]
79. "Color segmentation by ordered mergings", (with Jesus Angulo), in *ICIP 2003 IEEE International Conference on Image Processing*. 2003. Barcelona, Spain, September 14-17, 2003. p. II.125-128. [D-14/03/MM]
80. "Morphological coding of color images by vector connected filters" (with Jesus Angulo), Pré-print *ISSPA03*
81. "Mathematical Morphology in Color Spaces applied to the Analysis of Cartographic Images" (with Jesus Angulo), 9 p. Pré-print *GEOPRO -03*, S. Levachkine Ed. Centro de Investigación en Computación, Mexico
82. "Morphological segmentation of colour images" in *Mathematical Morphology: 40 Years On*, (Proceedings of ISMM'05), Ch. Ronse, L. Najman, E. Decencière Eds. Springer, pp. 151-176, April 2005
83. "Industrial Control by Vision", (invited Conference), in Proc. of the 7th *Int. Conf. on Quality Control and Industrial Vision*, Nagoya May 18-20 2005, H. Koshimizu and D. Fofi Eds. pp.3-18.
84. "A Lattice Approach to Image Segmentation" (shorten version), Tutorial, 5th IASTED Int. Conf. on Visualization, Imaging and Image Processing, Sept. 7-9 2005 Benidorm, Spain, 34p [N-39/05/MM].
85. "Morphological random simulations of Malaysian forest fires" (with M.D.H. Suliman and M.A. Awang), Proc. *DMAI' 2005*, Bangkok Nov. 4-6 2005, X.Chen Ed. 6 p.
86. "Morphological methods and disasters image analysis", (invited Conference), Proc. *DMAI' 2005*, Bangkok Nov. 4-6 2005, X.Chen Ed. 12 p.
87. "Random Spread and Forest Fires" *The Kiselmanfest: An international Symposium in Complex Analysis and Digital geometry*, Un. of Uppsala, Sweden, May 15-18, 2006
88. "Georges Matheron" *IAMG'06* Liège, Sept. 2006
89. "Matheron Lecture on Random Spread", (invited Conference), *IAMG'06* Liège, Sept. 2006
90. "Prediction of Scars in Malaysian Forest fires by means of Random Spreads" (with Mohd Dini Hairi Suliman and Mastura Mahmud) *Proc. of Int. ISPR Conf. on Techniques and Applications of Optical and SAR Imagery fusion*, J. Zhang, X. Tang Q. Yan and Y. Zhang Eds Chengdu 25-27 Sept. 2007
91. "The random Spread Model" in *Mathematical Morphology and its Applications to Image and Signal Processing*, (Proceedings of ISMM'07), G. Banon, J. Barrera and U. Braga-Neto, Eds. Ministério de Ciência e Tecnologia Brazil, pp. 87-100, Oct. 2007
92. "Digital Steiner Sets and Matheron Semi-groups" in *Mathematical Morphology and its Applications to Image and Signal Processing*, (Proceedings of ISMM'07), G. Banon, J. Barrera and U. Braga-Neto, Eds. Ministério de Ciência e Tecnologia Brazil, pp. 75-86, Oct. 2007

VII – Technical reports

1. Dossier des Manip sur l'Analyseur de Textures (1964-1967) :
 - Tucquenieux (Sections polies). August 1965 [N-1]
 - St Pierremont (Lames minces). 1965 [N-2]
 - Dendrites (Chloritisation). August 1965 [N-3]
 - Fissurations. 1965 [N-5]
 - Polypier. August 1965 [N-6]
 - Sondages Hassi – Messaoud (with J-M Fonck). August 1966 [N-7]
 - Chloritisation. August 1966(with J-M Fonck). [N-8]
 - Covariogrammes transitifs de gisement. August 1966 [N-9]
 - La lame mince de la Mourière.1965-1966 [N-10]
 - Plans - 1^{er} analyseur de textures. 1966-1967 [N-11]
 - Plans - Analyseur rapide de textures. 1967 [N-12]
 - Migration de la calcite. June 1966 [N-13]
 - Métallographie. June 1966 [N-14]
 - Etude de la semi-markovisation de schémas booléens.June 1965[N-15]
2. Remarques sur l'échantillonnage dans la mine d'Hayange (with H. Holvec) May 1964 [N-16]
3. Le problème de l'estimation du minerai en place, IRSID MCF-RI -374. July 1964 [N-17]
4. Les variables régionalisées - Le variogramme, outil de connaissance, October 1964 [N-18]
5. Les relations teneur-densité dans un minerai. November1964 [N-21]
6. Contribution à l'analyse pétrographique quantitative, January 1965 [N-23] resumed, with réductions, in Article 2)
7. La transformation en tout ou rien, February 1965 [N-24]
8. Répercussion des erreurs d'analyse des minerais sur la détermination de leur composition minéralogique, March 1965 [N-25]
9. Nouveau mode d'étude quantitatif des agencements pétrographiques et des faciès lithologiques : les régionalisations géométriques (Projet de texte pour *Economic Geology*). May 1965 [N-26]
10. A quantitative method of petrographic arrangements and lithologic facies : the geometrical regionalization (English Translation of. [N-26], May 1965 [N-27]
11. Règles d'échantillonnage des minerais lorrains en place October 1966 [N-29]
12. Géologie mathématique du gisement de fer lorrain , October 1966 [N-30]
13. Un critère nouveau de découverte de structures : le variogramme. (Sciences de la Terre, 1967, cf D-145) October 1966 [N-31]
14. Morphologie Mathématique et genèse des concrétions carbonatées des minerais de fer de lorraine (Sedimentology, 1968, cf. D-125) April 1967 [N-32]
15. Les structures gigognes : Morphologie Mathématique et interprétation métallogénique. May 1967 (tchech Translation of [N-32] par M. Nemeč. Congres of PRIBAM November

- 1968, Mineralium Deposita, 1968, cf. D-177) [N-33]
16. Buts et réalisation de l'analyseur de textures. May 1967, (Revue de l'Industrie Minérale, 1967, cf D-188) [N-34]
 17. Morphologie Mathématique et granulométries en place (with A. Haas and G. Matheron) (cf D-109) December 1967 [N-35]
 18. Mesure d'intervalles interdendritiques à l'aide de covariogrammes (with A. Alberny). September 1967 [N-36]
 19. Use of covariograms for dendritic arm spacing measurements (Traduction anglaise de la note précédente, publié; cf. article 8) September 1967 [N-38]
 20. Les fonctions aléatoires de dilution. August 1968 [N-37]
 21. Fonctions logiques de l'analyseur de textures. January 1969 [N-39]
 22. Introduction à la géostatistique. April 1969 [N-115]
 23. Introduccion a la geostatistica (Spanish Translation of [N-115], Conference in Chile, cf D-189). April 1969 [N-114]
 24. Analyse harmonique d'une fonction aléatoire. June 1969 [N-133]
 25. Plan de montage pour des ouvertures hexagonales. October 1969 [N-158]
 26. Estimateurs universels optimaux d'une régionalisation à plusieurs composantes. February 1970 [N-175]
 27. Quantification of lateritic type structures : Application to their estimation (Symposium on Decision-making in the Mineral Industry, Montréal, June 1970). March 1970 [N-181]
 28. Etude préliminaire du paléomagnétisme des grès d'Hassi-Messaoud (with C. Huijbregts). April 1970 [N-184]
 29. Random kriging. (Colloquium on Geostatistics, Lawrence, Kansas, June 1970, cf. D-305). May 1970 [N-188]
 30. Le concept de granulométrie. June 1970 (Congrès de l'Industrie Minérale, Orléans September 1970, cf D-232) [N-193]
 31. Morphologie Mathématique et sylviculture (with C. Miller and M. Poissonnet) Nov. 1970 (I.U.F.R.O., 3^{ème} Conf. du Groupe Consultatif des Statisticiens Forestiers, Jouy-en-Josas, Sept. 1970, *Les Annales Forestières*) [N-207]
 32. Problems of Masks in SOFA's measurements. January 1971 [N-216]
 33. Théorie de l'homogénéisation linéaire : Application à l'usine de Rombas. January 1971 (Replaced par N-307) (*Revue de l'Industrie Minérale*, 1972) [N-217]
 34. Contribution au glossaire du traité de métallurgie physique de Saclay. February 1971 [N-221]
 35. Projet de texte pour le traité d'informatique géologique. Chapitre 6 : Morphologie Mathématique. March 1971 (cf. D-582) [N-227]
 36. Eléments structurants et stéréologie. July 1971 [N-238]
 37. Structuring elements and stereology. (Trad. angl. de la note précédente. (3^{ème} ICS, Berne, J. of

- micr., 1972, cf D-388) August 1971[N-238-b]
38. The texture analyzer. (3^{ème} ICS, Berne, J. of Micr., 1972, cf. D-387). August 1971 [N-249]
 39. Estimations à travers les masques de mesure de l'analyseur de textures. October 1971[N-253]
 40. L'analyseur de textures. (Journées d'études sur Les liaisons entre traitement automatique et visualisation de l'information géologique, Nancy, October 1971, cf D-403-10). Sept. 1971 [N-255]
 41. Avant-propos sur la 2^{ème} partie du traité d'informatique géologique. November 1971 [N-261], (paru sous la signature de P. Laffitte dans ledit traité).
 42. Applications des méthodes mathématiques en géologie de l'ingénieur (with E.N. Kolomenski) [N-296](4 parties) :
 - 1^{ère} partie : Analyse des correspondances-analyse en composantes principales et leur application en géologie de l'ingénieur. (en russe), September 1972 [N-296-1]
 - 2^{ème} partie : Traduction russe de "Morphologie Mathématique et granulométries en place". September 1972 [N-296-2]
 - 3^{ème} partie : L'analyse pétrographique quantitative par la Morphologie Mathématique.(en français) July 1973 [N-296-3]
 - 4^{ème} partie : Application de la Morphologie Mathématique et de l'analyse des correspondances à la recherche des relations entre propriétés physiques et pétrographiques des roches volcaniques. May 1973 [N-296-4]
 43. Analyse des correspondances entre la morphologie mathématique du réseau poreux de roches volcaniques, et certaines de leurs propriétés physiques (with E.N. Kolomenski, V. Ladiguine and J-P. Orfeuill), original version, in Russian, of the communication [D-724] (Prague, 18-21 Sept. 1973) [N-296-5]
 44. L'échantillonnage des inclusions dans les aciers : théorie et applications à l'aide de l'analyseur de textures. Sept. 72 (Journée d'étude, 3^{ème} expo. Europ. de Métallurgie, Turin, October 1972) [N-298] (resumed with modifications in C 6, fascicule 11)
 45. Eléments structurants et stéréologie. July 1971(3^{ème} ICS, Berne, J. of micr., 95 : 93-103) [N-238]
 46. Stereology and structuring elements. (English translation of [N-238], August 1971)
 47. L'analyseur de textures (Colloque sur la visualisation, Nancy cf D-403-10) September 1971[N-255]
 48. L'échantillonnage des inclusions dans les aciers [N-298]
 49. Mathematical Morphology applied to fibre composite materials, (with G. Verchery) October 1972, [N-300] published in *Fibre Science and Technology*
 50. Les erreurs de champ en analyse quantitative d'image et leur correction, November 1972. [N-301].
 51. Lois de l'homogénéisation linéaire dans les parcs de minerais (with L. Ivanier), November 1972, published in *Revue de l'Industrie Minérale* [N-307]
 52. Erreurs dues à la logique dans les analyseurs d'image, January 1973. [N-310].

53. Etude de la distribution spatiale des ovogonies dans l'ovaire d'un embryon de ratte à l'aide de l'analyseur de textures, (with J. Digabel, P. Mauleon and C. Mariana), March 1973, published in *Annales de Biologie Animale*, [N-320]
54. Principes théoriques de l'analyseur de textures, April 1973. [N-326].
55. Facteurs de forme et granulométries in situ, published in *Proc. of the Int. Symp. RILEM-IUPAC Pore Structures and Properties of Materials*, Prague, 18-21 Sept. 1973.[N-337]
56. Liens entre la morphologie des enrobés bitumineux, leur déformation par ornierage et leur formule de fabrication (with F. Georges, J-C. Klein and R. Sauterey), published in *Proc. of the Int. Symp. RILEM-IUPAC Pore Structures and Properties of Materials*, Prague, 18-21 Sept. 1973.[N-338]
57. Analyse des correspondances entre la morphologie mathématique du réseau poreux de roches volcaniques, et certaines de leurs propriétés physiques (with E.N. Kolomenski, V. Ladiguine and J-P. Orfeuill), published in *Proc. of the Int. Symp. RILEM-IUPAC Pore Structures and Properties of Materials*, Prague, 18-21 Sept. 1973. [N-339]
58. Linear granulometry of a polycrystalline ceramic (with Ch. Lantuéjoul and A. Mocellin) (published in *Metallurgical Transactions of AIME*). October 1973. [N-350].
59. Quelques algorithmes de morphologie mathématique en vue de la programmation de l'analyseur. Décembre 1973. [N-358].
60. Aggrégats de points et morphologie. January 1974. [N-362].
61. Note sur un rapport confidentiel de MM. de Courcy, Laffond et Moliexe, relatif à l'analyseur de textures. March 1974. [N-368].
62. List of basic programs for the texture analyser. March 1974. [N-372].
63. Les mesures aléatoires (with H. Digabel and Ch. Lantuéjoul), July 1974. [N-380].
64. Granulométries et variances des nodules polymétalliques (with O. Péray), Contrat CNEXO N° 73/874. July 1974. [N-381].
65. Laws of linear homogenisation in ore stockyards (with Ch. Huijbregts and I. Ivanier) September 1974. 42 p. (*11th Int. Mineral Processing Congress*, Cagliari, 1975). [N-387].
66. Une méthode pour lier la dégradation granulométrique de préconçassés à leur morphologie in situ. Action concertée DGRST 1/5/74 - 1/5/75. October 1974. [N-393].
67. Trois fascicules de présentation de l'analyseur de textures(with Ph. Cauwe), October 1974. [N-396].
68. Estimation de la variance de l'étoile à partir d'une trame hexagonale. November 1974. [N-397].
69. Pour reconnaître les inclusions : chartes ou Analyseur de Textures ? (with D.Jeulin), published in *Revue de Metallurgie*, January 1975 [N-399]
70. Etude de la répartition de la végétation sur une photo aérienne (with L.Lorrain and B.Naert) June 1974, [N-401]
71. Morphologie pour les fonctions "à peu près en tout ou rien". April 1975. [N-406].
72. Caractérisation de l'anisotropie de retrait des bois tropicaux par variogrammes mesurés à l'analyseur de textures (with A. Mariaux and O. Péray), June 1975. [N-417].

73. The texture analyser measurements and physical anisotropy of tropical woods. (with A. Mariaux and O. Péray) published in *Nat. Bur. Stand.* June 1975 [N-424]
74. Présentation de la Morphologie Mathématique, published in *Annales des Mines*, July 1975 [N-429]
75. Stochastic Models in Stereology, published in *Nat. Bur. Stand* July 1975 [N-430]
76. Trois études de Morphologie Mathématique en géologie de l'Ingénieur, (with E.N. Kolomenski), published in *Bull. de l'Association Internationale de Géologie de l'Ingénieur*, February 1976 [N-454]
77. La quantification en pétrologie, (with E.N. Kolomenski), published in *Bull. de l'Association Internationale de Géologie de l'Ingénieur* Décembre 1975 [N-454 bis]
78. Mathematische Morphologie und die Petrographie, (with E.N. Kolomenski), traduction allemande remaniant [N-454] et [N-454 bis] et parue en □□D-1181b] ; [N-454 ter].
79. Influence de la fissuration des minerais sur leur aptitude au broyage(with H. Digabel) Contrat DGRST n° 74-7-1154. August 1976. [N-478].
80. Quantitative wood anatomy studies using a surface texture analyser (with P. Gueneau and A. Mariaux) September 1976. [N-481].
81. En matière d'introduction... (with R. Miles) published in *Geometrical Probability and Biological Structures - Buffon's 200th anniversary* , [N-481 bis].
82. L'analyse des images biomédicales par la Morphologie Mathématique, published in *Pathologie Biologie*, January 1977 [N-500]
83. One, two, three..., infinity. July 1977. [N-525].
84. Principles, criteria and algorithms in mathematical morphology. September 1978. [N-578].
85. Automatisation du comptage des cellules des grains du cervelet (with H. Digabel), Rapport de fin d'étude, DGRST. June 1979. [N-605].
86. Boolean Model and Random Sets, published in *Computer Graphics and Image Processing*, Août 1979, [N-614]
87. Digitalization, published in *Mikroskopie* , November 1979, [N-629]
88. Note sur les transformations de Walsh dans le plan. Décembre 1979. [N-640].
89. A few proposals for (partially) filling up a M.I.A.S. (with M. Gauthier and F. Meyer), February 1980. [N-644].
90. Quantitative image transformations in cytology. February 1980. [N-645].
91. Projet d'analyseur d'images (with M. Gauthier, J-C Klein, Ch. Lantuéjou and F. Meyer), 34 p. February 1980. [N-648].
92. Enquête sur la lecture optique (with M. Gauthier and J-C Klein), January 1981. [N-683].
93. Contribution au glossaire du traité de métallurgie physique de Saclay. February 1981[N-689]
94. Shapes and Patterns of Microstructures considered as Grey-tone Functions, (with S. Beucher), published in *Stereol. Jugosl.* July 1981, 22p. [N- 708] .

95. Image segmentation or image understanding, published in *Proc. ICASSP 82*, February 1982, 5p. [N- 739].
96. Digital Morphology in the 3-D space, published in *Proc. ICASSP 82*, February 1982, 6p. [N-741].
97. M-Filters (with Ch. Lantuéjoul), published in *Proc. ICASSP 82*, February 1982, 6p. [N-742].
98. Les filtres morphologiques. February 1982. 17 p. [N-744].
99. Analyse d'images par la morphologie mathématique. April 1982. 1st Project for *la Recherche* 20 p. [N-753].
100. Flatness and roughness of non planar surfaces, published in *J. of Micr.* 19p., June 1982, [N-760]
101. Détermination des contacts entre billes à partir de coupes planes. July 1982. 13 p. [N-767].
102. L'analyseur de textures (with M. Heitman and J. Ossard), Project for the *Annales des Mines*. October 1982. 8 p. [N-773].
103. Analyse d'images par la morphologie mathématique. Décembre 1982. Project for *la Recherche* 20 p. [N-790].
104. Logical Framework and Program of Mathematical Morphology. (*Symposium on mathematical morphology*, Prague, Sept. 1982). December 1982. 20 p. [N-791].
105. An Introduction to Mathematical Morphology, published in *Computer Vision, Graphics, and Image Processing*, 47p. December 1982, [N-787]
106. Chapter VIII, Estimation Variances for «*Image Analysis and Mathematical Morphology* »(chapter suppressed in the final book), 40 p., January 1983.
107. Méthodes morphologiques de transformations des images biologiques, (with F. Meyer) published in *13ème Congrès des Anato-mo-Pathologistes de Langue Française*, March 1983 [N-801].
108. Quelques semi-groupes de filtrages morphologiques. April 1983. 30 p. [N-807].
109. Morphologie mathématique pour les algèbres de Boole: Exemples de morphologie non stationnaire. April 1983. 64 p. [N-822].
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111. Contacts between balls calculated from plane sections, published in *J. of Micr*, 6 p. October 1983, [N- 857]
112. Peut-on bâtir des filtres morphologiques de type refuse (ou passe) bande ? February 1984. 5 p. [N-873].
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116. Du bon usage des dodécagones. August 1984. 22 p. [N-912].

117. Les filtres morphologiques euclidiens. August 1984. 24 p. [N-913].
118. Convolution et triangle de Pascal. 10 p. [N-914].
119. Variations dans les arts plastiques et en géométrie ensembliste, published in *La création vagabonde*, 9 p. August 1984 [N-915]
120. Example of Estimation Variances, by Transitive Methods, in *Animal Anatomy*. December 1984. 10 p. [N-938].
121. Contacts in random packing of spheres, (with Y. Pomeau) published in *J. of Micr.*, 13p., December 1984 [N-942].
122. Fonctions aléatoires booléennes. May 1985, 8p. [N-961]
123. Optique morphologique, oct. 1985, Vol.I 110p., Vol. II 206p. [N-961bis]
124. Morphological Optics, published in the *journal of Microscopy*, 30 p., Fevrier 1986 [N-06/86/MM]
125. Estimation variances in stereology, February 1986, 35 p. [N-7/86/MM]
126. *Advances in Mathematical Morphology*: Preface and first part. (with G.Matheron) June 1986, 123 p. [N-21-1/87/MM]
127. *Advances in Mathematical Morphology* - Part two. (with G.Matheron) June 1986, 155 p. [N-21-2/87/MM]
128. Serra J., Matheron G., Prêteux F., Schmitt M., Jourlin M., Laget B. : *Advances in Mathematical Morphology* - Part four (with G.Matheron, F. Prêteux, M.Schmitt, M. Jourlin, B. Laget). 1986, 92 p. [N-21-4/87/MM]
129. *Activité et contrastes*, January 1987, 18 p. [N-23/87/MM]
130. Comparaison des Saint Jérôme de Georges de La tour (with X.Duclairoir, R. Rouquet, Ch. De Couessin) Published in the *Journal de Microscopie et Spectroscopie Electronique*, January 1987, 5 p. [N-31/87/MM]
131. Thickenings, thinnings. June 1987, 27 p. [N-39/87/MM]
132. Le problème du tailleur, February 1988, 5 p. [N-02/88/MM]
133. Présentation du Centre de Morphologie Mathématique (with S. Beucher, J-C.Klein, F. Meyer) April 1988, 22 p. [N-06/88/MM]
134. Principles of Mathematical Morphology, (project for Nato II Ciocco) April 1988, 18 p. [N-06b/88/MM]
135. L'algorithme du tailleur (Reprise), April 1988, 9 p. [N-07/88/MM]
136. Toggle mappings. COST 13 Workshop "From the pixels to the features", Bonas, August 1988. 12 p. [N-18/88/MM]
137. "Analyse d'image et Microscopie Electronique", Sept. 1988, 10p. [N-23/88/MM] [D-110/90/MM, Ch. 1 ANRT, Paris, 1990, A1-A10]
138. Contrasts and activity lattice (with F. Meyer) *Special issue of Signal Processing* Vol. 16 N° 4, October 1988, 30 p. [N-25/88/MM]

139. *Advances in Mathematical Morphology*, (introduction for the *Special issue of Signal Processing* Vol. 16 N° 4), October 1988, 6 p. [N-06c/88/MM]
140. Boolean random functions. published in the *Journal of Microscopy*, November 1988, 35 p. [N-27/88/MM] (replaces the 1st version N-12/88/MM of June 88)
141. Itérations et convergence. (answer to the note "Itérations and Morphological Transformations" de H.J.A.M. Heijmans). March 1989, 14 p. [N-05/89/MM]
142. Filters : from theory to practice (with F. Meyer). 5th European Congress for Stereology, Sept. 1989, Freiburg. 6 p [N-17/89/MM]
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144. The top twenty morphological transformations CMM-Armines/Cambridge Instruments. March 1990, 45 p. [N-09/90/MM]
145. Le Centre de Morphologie Mathématique: Presentation of CMM for the Siggraph.(with F. Meyer) April 1990, 3 p. [N-12/90/MM]
146. An overview of Morphological filtering.(with L. Vincent) published in *IEEE Trans. on Circuits, Systems and Signal Processing*, Special Issue on Median and Morphological Filtering. April 1990, 68 p. [N-19/90/MM]
147. Elements of functional analysis in *Mathematical Morphology* (with J. Barrera) December 1989, 51 p. [N-39/90/MM]
148. The links : definition and properties. published in *Conf. SPIE VCIP'90*, 1-4 Oct. 1990, Lausanne. 12 p [N-40/90/MM]
149. Convergence, Continuity and Iteration in *Mathematical Morphology* (with H.J.A.M. Heijmans) published in the *J. of Visual Communication and Image Representation*. November 1990, 32 p. [N-51/90/MM]
150. Sept mini-études. July 1991, 22 p. [N-33/91/MM]
151. Dimensionality in image analysis (with J-F.Rivest and P. Soille) published in *JVCIR* ,31 October 1991, 29 p. [N-50/91/MM]
152. Dimensional measurements and operators in mathematical morphology (with J-F.Rivest and P. Soille). published in *Proc. SPIE "Image Science and Technology"*, San Jose, Feb. 92. 20 November 1991, 12 p. [N-54/91/MM]
153. Morphological filters and image symmetries (with A.V. Tuzikov and P.A. Zaleskii) June 1991, 14 p. [N-58/91/MM]
154. Anamorphoses and function lattices. En vue du livre organisé par Dougherty. December 1991, 57 p. [N-60/91/MM]
155. Obras durante su año sabático 1991-1992 en la U.P.C. y en la U.A.B. – Volumen I:
 - Anamorphoses and function lattices. Chapter 13 "Mathematical Morphology in Image Processing", E. Dougherty (Ed.), Marcel Dekker, NY, 1992, 57 p. [N-18-1/92/MM]
156. Obras durante su año sabático 1991-1992 en la U.P.C. y en la U.A.B. - Volumen II:
 - Comentarios sobre interpolación y codificación de contornos - Skeleton decompositions (SPIE, San Diego'92)
 - Equicontinuous functions (SPIE, San Diego'92)

- Connectivity filters for image sequences (con Montse Pardàs y Luis Torres) (SPIE, San Diego'92)
 - Tailleur: el problema del sastre (con Narcis Parés) (5° Simposium Nacional de Reconocimiento de Formas y Analisis de Imagines, Valencia, sept. 92, pp. 23-30. [D-48/92/MM]
 - Utility of grey level granulometry to measure renal interstitial chronic damage (con M.F. Colomé-Serra, D. Seron, F. Moreso, M. Carrera y J.M. Grino). (IEEE Int. Conf. Medicine, Paris, Oct. 92). [N-18-1/92/MM]
157. Obras durante su año sabático 1991-1992 en la U.P.C. y en la U.A.B. - Volumen III: Curso de Morfología Matemática (with Ph. Salembier) 1992. (= C-05/92/MM) [N-18-3/92/MM] (resumed in course nº 23)
158. Opérateurs connexes et pyramides (with Ph. Salembier) handwritten version, February 1993, 46 p. [N-03/93/MM]
159. Distances de Hausdorff et interpolations Projet RACE, June 1993, 24 p. [N-10/93/MM]
160. Connected operators and pyramids (with Ph. Salembier), English translation of techn. report N-03/93/MM, Submitted to *IEEE*, May 1993, 28 p. [N-11/93/MM]
161. Connected operators and pyramids (with Ph. Salembier). *SPIE*, San Diego'93 (resumes partly N-11/93/MM), June 1993, 12 p. [N-12/93/MM]
162. Les treillis de fonctions équi-continues. (*Colloque Gédéon*, Strasbourg, September 1993), July 1993, 36 p. [N-13/93/MM]
163. On a rotational symmetry of convex sets (with G.L. Margolin and A.V. Tusikov) May 3 1993, 11 p. [N-14/93/MM]
164. Opérateurs connexes et pyramides (with Ph. Salembier), *Congrès RFIA/AF CET*, January 1994 (Annule et remplace N-08/93/MM), November 1993, 12 p. [N-30/93/MM]
165. Amincissements homotopiques en trame cube-octaédrique. January 1994, 2 p. [N-05/94/MM]
166. Interpolations et distances de Hausdorff, Projet RACE (completed by N-16 and N-18 of F. Meyer and S. Beucher resp.), May 1994, 24 p. [N-15/94/MM]
167. Interactions entre structures des matériaux et modèles aléatoires. *Journées d'Etudes INRP/CNAM*, Paris 15 and 16 June 1995, 6 p. [N-09/95/MM]
168. Graph-based morphological filtering and segmentation (with J. Crespo José and R.W. Schafer), *VI Spanish Symposium on Pattern Recognition and Image Analysis*, Cordoba, April 1995, 8 p. [N-10/95/MM]
169. Theoretical aspects of morphological filters by reconstruction (with J. Crespo José and R.W. Schafer), published in *Signal Processing*, January 1995, 54 p. [N-19/95/MM]
170. Morphological image segmentation. Conférence invitée, 9th *ICS*, Copenhagen, 21-25 August 1995, published in *Acta Stereologica*, September 1995, 13 p. [N-20/95/MM]
171. Connectivity on complete lattices. *ISMM'96* Atlanta, January 1996, 16 p. [N-03/96/MM]
172. Connectivity on complete lattices. (Version étendue de N-03/96/MM) Presented at MIT in February 1996, 40 p. [N-04/96/MM]
173. Industrial control by vision. Invited Conference, published in *Proc. Interface'96, SISC, Sydney International Statistical Congress*, Australia, April 1996, 9 p. [N-12/96/MM]

174. Equicontinuous random functions. A paraître dans le Numéro spécial de Electronic Imaging: Random models in imaging. (Version more complete than the same title in *Proc. Advances in Theory and Applications of Random Sets*, Fontainebleau, Oct. 1996), November 1996, 14 p. [N-41/96/MM]
175. Use of Mathematical Morphology in industrial control. for the special volume of the 20ème anniversaire of I'ISS, published in "*Microscopy, Microanalysis and Microstructures*", 3 December 1996, 8 p. [N-43/96/MM]
176. Connection and segmentation - Motion picture restoration (with E. Decencière) NOBLESSE Review Meeting, CMM 12-13 March 1997, 27 p. [NT-08/97/MM]
177. Morphological image enlargements (with A. Albiol), published in JVCIR, 15 September 1997, 43 p. [N-22/97/MM]
178. Cube, cube-octahedron or rhombododecahedron as bases for 3-D shape descriptions. (*IWVF3*, May 1997, Capri), July 1997, 18 p. [N-25/97/MM]
179. Hausdorff distances and interpolations. *ISMM'98*, September 1997, 8 p. [N-26/97/MM]
180. Application of the morphological geodesic reconstruction to image sequence (with E. Decencière Ferrandière , S. Marshall), published in *IEE Proceedings: Vision, Image and Signal Processing*, December 1997, 13 p. [N-33/97/MM]
181. Connectivity on complete lattices, published in the *Journal of Mathematical Imaging and Vision*, February 1998, 44 p. [N-06/98/MM]
182. La naissance de la Morphologie Mathématique, (with G. Matheron) June 1998. 15 p. [N-14/98/MM]
183. The Birth of Mathematical Morphology (with G. Matheron), June 1998, [N-07/00/MM].
184. Quelques propriétés des nivellements, October 1998. 4 p. [N-30/98/MM].
185. Software procedures for 3D morphological processing, (with Mariusz Mlynarczuk), Projet NOBLESSE, "Nonlinear model-based analysis & description of images for multimedia applications" EC-DG 111/F - Industry No 20229, Deliverable 45-1. December 1998. 15 p. [N-43/98/MM].
186. Set connections and discrete filtering. *DGCI'99*. 11 December 1998. 16 p. [N-44/98/MM].
187. Segmentation de lames minces polarisées (with M. Mlynarczuk Mariusz, F. Bailly, S. Bouchet) December 1998. 7 p. [N-48/98/MM].
188. CMM and CG studies on covariance. May 1998, CMM-Fontainebleau, ENSMP. 3 p. [N-31/99/MM].
189. Connections for sets and functions published in *Fundamenta Informaticae*. May 1999, 40p. [N-25/99/MM]. (cf. D-01/00/MM)
190. "A model based method for line scratches detection and removal in degraded motion picture sequences" (with M.E. Diaz and E. Decencière) June 1999 [N-42/00/MM]
191. Les treillis visqueux. December 1999. 13 p. [N-51/99/MM].
192. Morphological operators on the unit circle (A. Hanbury) Submitted to *IEEE Transactions on Image Processing*. 28 March 2000. 17 p. [N-11/00/MM]
193. Fusion morphologique de données multidimensionnelles (with M. Mlynarczuk) May 2000. 13

- p. [N-18/00/MM].
194. Morphological merging of multidimensional data (with M. Mlynarczuk) (*STERMAT'2000*, Krakow, 20 Sept. 2000). May 2000. 6 p. [N-19/00/MM].
 195. Is pattern recognition a physical science ? (Conférence invitée *ICPR 2000*, Barcelone, 3 Sept. 2000) May 2000. 8 p. [N-20/00/MM]
 196. Image processing : what for and how to do it ? published in *fotografiando Mathematicas*, June 2000, 3p. [N-21/00/MM]
 197. Descriptions morphologiques par fronts d'onde tridimensionnels, December 2000 [N-34/00/MM]
 198. Morphological operators on the unit circle (with A. Hanbury), revised version, Submitted to *IEEE Transactions on Image Processing*. August 2001. 14 p. [N-04/01/MM] (Remplaces N-03/01/MM)
 199. Etude morphologique de la texture de la chromatine des lymphocytes (with J. Angulo). Communication 24ème Journée ISS, Ecole des Mines de Paris, 8 February 2001. 10 p. [NT-41/01/MM].
 200. Analysis of genome image arrays using mathematical morphology (with J. Angulo). February 2001. 29 p. [N-42/01/MM].
 201. Quantitative descriptors of the lymphocytes using mathematical morphology. First part : Definition of descriptors (with J. Angulo and G. Flandrin). March 2001. 57p. [N-48/01/MM].
 202. Quantitative cytology using mathematical morphology : Comparative study between various laboratories (with J. Angulo). Angulo's thesis internal note. March 2001. 27 p. [N-43/01/MM].
 203. Geodesy and Connectivity in Lattices (with C. Ronse) submitted to *Fundamenta Informaticae*, April 2001, 45 p. [N-08/01/MM]
 204. Morphological descriptions using three-dimensional wavefronts. Projet de communication à 8 ECS, 8th European Congress for Stereology and Image Analysis, Bordeaux, 4-7 September 2001. June 7, 2001. 29 p. [N-30/01/MM]. (Translation of N-34/00/MM)
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 210. Développement d'assistants numériques au service de la microscopie diagnostique en hématologie (with J. Angulo). Final report Contrat TRIBVN / ARMINES. September 2001. 15 p. [N-45/01/MM].
 211. Morphological spectrum applied to genome arrays quantification (with J. Angulo). 3rd october

2001. 25 p. [N-49/01/MM].
212. Composition products by over-filters, october 2001, 8p. [N-58/01/MM]
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214. Viscous lattices. Project of communication for ISMM'02. November 2001. 11 p. [N-63/01/MM].
215. Connexions et segmentation d'image, January 2002. 13 p [N-23/02/MM]
216. Sur l'application du front d'onde à la description morphologique des structures arborescentes et ramifiées (with J. Angulo), February 2002, 30p [N-28/02/MM]
217. Morphological descriptions using three-dimensional wavefronts. (published in Image Analysis & Stereology), March 2002, 18 p. [N-09/02/MM].
218. Moduli of continuity and structuring functions. April 2002, 7 p. [N-13/02/MM].
219. Lattices of numerical functions . To be joined to the course on Mathematical Morphology as chapter 4. May 2002, 22 p. [C-06/02/MM].
220. Final report, projet BIO CRITT MATCHCELL - Collaboration ARCHE, ARMINES, TRIBVN (with J. Angulo, J. Klossa Jacques, G. Flandrin) (CONFIDENTIEL 5 ans). April 2002. 28 p. [N-30/02/MM].
221. Automatic analysis of DNA microarray images using mathematical morphology (with J. Angulo). Submitted to Bioinformatics. August 2002. 50p. [N-32/02/MM]. (Révision note N-62/01/MM)
222. A mathematical morphology contribution to the analysis of DNA microarray images (with J. Angulo). Papier 5th European Society of Mathematical and Theoretical Biology (ECMTB 2002), Milano, Italy, July 2-6, 2002. 1 Abstract + 25 transp. [N- 33/02/MM].
223. Connections and Image segmentation , translaton of the techn. report [N-23/02/MM] 10p [N-23/02/MM]
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224. Connection, Image Segmentation and Filtering October 2002 12p [N-38/ 02/MM] (invited lecture at CIC 2002, México D.F.)
225. Aplicacion de la morfologia matematica a la telemedicina y a la biotecnologia: caracterizacion morfologica de cellulas de la sangre y analisis de *cDNA microarrays*, (with Jesus Angulo), to be presented at CIARP 2002, México D.F. [N-39/ 02/MM]
226. Histogrammes luminance/saturation pour les images couleur en représentation par norme L_1 (with Jesus Angulo), March 2003, 25p [N-01/03/MM]
227. J. Angulo et J. Serra, "Color segmentation by ordered mergings", (with Jesus Angulo), Pré-print ICIP03 [N-04/03/MM].

228. "Morphological coding of color images by vector connected filters" (with Jesus Angulo), Pré-print ISSPA03 [N-05/03/MM]

229. "Segmentación de imágenes color utilizando histogramas bi-variables en espacios color en coordenadas polares" // Image color segmentation using bivariate histograms in 3D-polar color (en español). Submitted to *Computación y Sistemas*. May 2003, 10 p. (Spanish version of N-03/03/MM) [N-13/03/MM].

230. "A 3-D Polar coordinates Colour Representation suitable for Image Analysis", (with A. Hanbury), 35p. March 2003 [N- 08/03/MM].

231. Travaux sur la couleur in 1999-2003 [N-09/03/MM]

232. Image segmentation, communication, for ICIP 03 [N-10/03/MM]

233. Connexions et segmentation d'image, published in *Traitement du Signal* (remplace N-36/02/MM) [N-11/03/MM]

234. Viscous Lattices (new version, submitted to JMIV in January 2004) [N-01/04/MM]

235. A lattice approach to Image segmentation , 87 p. January 2004 (submitted to JMIV) [N-02/04/MM]

236. Traitement des images de couleur en représentation luminance/saturation/teinte par norme L₁ (with Jesus Angulo), published in *Traitement du Signal* November 2004, 36p [N-23/04/MM].

237. Viscous Lattices, 23 p. (corrected version of NI 234, sent to JMIV in Oct. 2004) [N-11/04/MM].

238. A lattice approach to Image segmentation , 76 p. December 2004 (sent to JMIV) [N-03/05/MM].

239. La segmentation en couleurs au CMM, January 2005, 12 p.[N-02/05/MM].

240. Morphological segmentations of colour images (communication at ISMM'05) January 2005. 28p. [N-04/05/MM].

241. Morphological operators for the segmentation of colour images. (published in the Book in tribute to G. Matheron, F. Meyer and M. Schmitt, eds. Springer 2005). August 2004. 32 p. [N-25/04/MM].

242. The lattice of the compact discs, (ESIEE techn. report) April 2005, 5p. [N-17/05/MM].

243. Random spread and dilation, (ESIEE techn. report) August 2005, 27p. [N-29/05/MM].

244. Quantitative Polar Representations of Colour Images (with J. Angulo) 1st part: Modelling (33p.), and 2nd part: Segmentation (24p.) September 2005, Submitted to *Image Vision and Computing*.

245. Réponse à la note "le treillis des partitions et la segmentation" de F. Meyer, April - September 2005, 44p.[N-30/05/MM].

246. Random Spread and Forest fires (with Mohd. Dini Hairi Suliman), 35 p. January 2006, Submitted to *Int. Journal of Remote Sensing* [N-01/06/MM]