

## Publications de l'Axe 1 – 2018

### Fabien Besnard

Revues à comité de lecture et à diffusion internationale

F. Besnard, N. Bizi, On the definition of spacetimes in Noncommutative Geometry: Part I, *Journal of Geometry and Physics* 123 (2018) 292-309.

Space and time dimensions of algebras with application to Lorentzian noncommutative geometry and quantum electrodynamics Nadir Bizi, Christian Brouder, Fabien Besnard June 2018, *Journal of Mathematical Physics* 59(6):062303 DOI: 10.1063/1.5010424

Conference paper

F. Besnard, Spacetimes in Noncommutative Geometry: a definition and some examples, *Journal of Physics: Conference Series* 968 (1), 012002.

### Mahdi Chemki

Revues à comité de lecture et à diffusion internationale

A. Merabtine, A. Al Waheed Hawila, M.Chemkhi, N. Troussier “An analysis of the impact of PMV-based thermal comfort control during heating period: A case study of highly glazed room”, *Journal of Building Engineering*, 2018, 20, 353-366.

Q. Portella, M Chemkhi, D Retraint, « Residual Stresses Analysis in AISI 316L Processed by Selective Laser Melting (SLM) Treated by Mechanical Post-Processing Treatments », *Residual Stresses 2018 : ECRS -10 6*, 271

Conference paper

A. Merabtine,A. Al Waheed Hawila, M.Chemkhi, N. Troussier « Influence of PMV-based control on energy consumption and thermal comfort during heating period in a highly glazed room” *Conférence Francophone de l'International Building Performance Simulation Association, IBPSA France 2018, Mai 2018.*

### Yazid Madi

Revues à comité de lecture et à diffusion internationale

J Marae-Djouda, A Gontier, R Caputo, G Lévêque Y. Madi “Dense Brushes of Tilted Metallic Nanorods Grown onto Stretchable Substrates for Optical Strain Sensing” , *ACS Applied Nano Materials.*, 2018, 1 (5), pp 2347–2355, 2018, DOI: 10.1021/acsanm.8b00441

B. Kondori, Y. Madi, J. Besson, A. Benzerga, “Evolution of the 3D plastic anisotropy of HCP metals: Experiments and modeling”, *International Journal of Plasticity*, February 2018, <https://doi.org/10.1016/j.ijplas.2017.12.002>

### Conference paper

C Soret, JM Djouda, M Bonnaudet, M Zarea, Y Madi « Implementation of a New Tool for Pipelines Integrity Evaluation: A Correlation Between Local Strains and Hardness », 2018 12th International Pipeline Conference, 2018

S Hjej, N Osipov, A Lebrun, C Soret, Y Madi « Evaluation of the Fatigue Crack Growth Behavior by Experiments and Numerical Simulations on Full-Size Pipeline Steels » - 2018 12th International Pipeline Conference, 2018

### Julien Gardan

Revue à comité de lecture et à diffusion internationale

J. Gardan, Naman Recho, A. Makké, "Fracture improvement by reinforcing the structure of ABS parts manufactured by Fused Deposition Modeling (FDM - 3D Printing)", Janvier 2018

Merabtine, N. Gardan, J. Gardan, X. Lu Gong, H. Badredhine, C. Zhang, F. Zhu, "Experimental and numerical thermal analysis of open-cell metal foams developed through a topological optimization and 3D printing process" The European Physical Journal Applied Physics DOI: 10.1051/epjap/2018180060 July 2018

P. Lanzilotti, J. Gardan, Naman Recho, A. Makké, "Strengthening in fracture toughness of a smart material manufactured by 3D printing" DOI: 10.1016/j.ifacol.2018.08.342, January 2018,

J. Gardan, "Smart materials in additive manufacturing: state of the art and trends", Virtual and Physical Prototyping DOI: 10.1080/17452759.2018.1518016, Octobre 2018

J. Gardan, Naman Recho, A. Makké, Fracture Improvement by Reinforcing the Structure of Acrylonitrile Butadiene Styrene Parts Manufactured by Fused Deposition Modeling, DOI: 10.1089/3dp.2017.0039, Juin 2018

J. Gardan, A. Makke, N. Recho, « Improving the fracture toughness of 3D printed thermoplastic polymers by fused deposition modeling », 2018, 210, Issue 1-2.

### Conference paper

P. Lanzilotti, Julien Gardan, Naman Recho, Ali Makké, "Strengthening in Fracture Toughness of a Smart Material Manufactured by 3D Printing". Conference: 16th IFAC Symposium on Information Control Problems in Manufacturing INCOM 2018 Bergamo, Italy, Juin 2018

M. Geoffroy, J. Gardan, J. Goodnough, Y. Mattie, "Cranial Remodeling Orthosis for Infantile Plagiocephaly Created Through a 3D Scan, Topological Optimization, and 3D Printing Process, JPO Journal of Prosthetics and Orthotics 30(4):1 DOI: 10.1097/JPO.000000000000190 – Avril 2018

### Ali Makké

Revue à comité de lecture et à diffusion internationale

J. Gardan, Naman Recho, A. Makké, "Fracture improvement by reinforcing the structure of ABS parts manufactured by Fused Deposition Modeling (FDM - 3D Printing)", Janvier 2018

P. Lanzilotti, J. Gardan, Naman Recho, A. Makké, "Strengthening in fracture toughness of a smart material manufactured by 3D printing" DOI: 10.1016/j.ifacol.2018.08.342, January 2018,

J. Gardan, Naman Recho, A. Makké, "Fracture Improvement by Reinforcing the Structure of Acrylonitrile Butadiene Styrene Parts Manufactured by Fused Deposition Modeling", DOI: 10.1089/3dp.2017.0039, Juin 2018

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### Joseph Marae Djouda

Revue à comité de lecture et à diffusion internationale

J Marae-Djouda, A Gontier, R Caputo, G Lévêque Y. Madi "Dense Brushes of Tilted Metallic Nanorods Grown onto Stretchable Substrates for Optical Strain Sensing" , ACS ACS Applied Nano Materials., 2018, 1 (5), pp 2347–2355, 2018, DOI: 10.1021/acsanm.8b00441

### Conference paper

C Soret, JM Djouda, M Bonnaudet, M Zarea, Y Madi « Implementation of a New Tool for Pipelines Integrity Evaluation: A Correlation Between Local Strains and Hardness », 2018 12th International Pipeline Conference, 2018

### Thomas Provot

#### Ouvrage

T. Provot, R. Serra, S. Requy, C. Bittencourt machado, X. Chiementin, M. Bernardo-filho "instrumentation for mechanical vibration analysis, in redha taïar", Whole Body Vibrations: Physical and Biological Effects on the Human Body, CRC-Press, 2018.

### Naman Recho

Revue à comité de lecture et à diffusion internationale

J. Gardan, Naman Recho, A. Makké, "Fracture improvement by reinforcing the structure of ABS parts manufactured by Fused Deposition Modeling (FDM - 3D Printing)", Janvier 2018

S.El Kabir, F. Dubois, R. Moutou Pitti, N. Recho, Y. Lapusta, "A new analytical generalization of the J and G-theta integrals for planar cracks in a three-dimensional medium", Theoretical and Applied Fracture Mechanics", 2018, 94, 101-109

N. Recho, T. Lassen, O. Mikkelsen "Fatigue crack growth in welds based on a V-notch model for the short crack propagation at the toe", Procedia Engineering 213:239-254 DOI: 10.1016/j.proeng.2018.02.025, Jan 2018

P. Lanzilotti, J. Gardan, Naman Recho, A. Makké, "Strengthening in fracture toughness of a smart material manufactured by 3D printing" DOI: 10.1016/j.ifacol.2018.08.342, January 2018,

J. Gardan, Naman Recho, A. Makké, "Fracture Improvement by Reinforcing the Structure of Acrylonitrile Butadiene Styrene Parts Manufactured by Fused Deposition Modeling", DOI: 10.1089/3dp.2017.0039, Juin 2018

### Conference paper

S. El Kabir, F. Dubois, R. Moutou Pitti, N. Recho, Y. Lapusta "Numerical and analytical modeling of crack path for three-dimensional mixed mode crack problem using global approach" Conference: 22nd European Conference on Fracture ECF22 At: Belgrade, Serbia, February 2018

S. El Kabir, F. Dubois, R. Moutou Pitti, N. Recho, Y. Lapusta "A three-dimensional local mechanical field around crack front for isotropic and orthotropic materials", Conference: 22nd European Conference on Fracture ECF22 At: Belgrade, Serbia, Février 2018

P. Lanzilotti, Julien Gardan, Naman Recho, Ali Makké, "Strengthening in Fracture Toughness of a Smart Material Manufactured by 3D Printing". Conference: 16th IFAC Symposium on Information Control Problems in Manufacturing INCOM 2018 Bergamo, Italy, Juin 2018

S. El Kabir, F. Dubois, R. Moutou Pitti, Y. Lapusta, N. Recho, « Modélisation tridimensionnelle du comportement mécanique des milieux fissurés en mode mixte : vers l'étude de la fissuration du bois en environnement variable » 7<sup>èmes</sup> journées du GDR 3544 « Sciences du bois » - Cluny, 20-22 novembre 2018

### Jérémy Rouot

Monographie

B. Bonnard, M. Chyba, "Geometric and Numerical Optimal Control with Application to Swimming at Low Reynolds Number and Medical Resonance Imaging". Springer International Publishing, XIV-108, Springer- Briefs in Mathematics (2018). (118 pages), <http://hal.archives-ouvertes.fr/hal-01226734>

Revue à comité de lecture et à diffusion internationale

B. Bonnard, M. Chyba, J. Rouot and D. Takagi, "Sub-Riemannian geometry, Hamiltonian dynamics, microswimmers, Copepod nauplii and Copepod robot", Pac. J. Math. Ind. **10** (2) (2018). (42 pages) <http://hal.archives-ouvertes.fr/hal-01653901>

P. Bettiol, B. Bonnard, A. Nolot, J. Rouot. "Sub-Riemannian geometry and swimming at low Reynolds number : the Copepod case", ESAIM : COCV, EDP Sciences, (2018). (29 pages). <http://hal.archives-ouvertes.fr/hal-01442880>

P. Bettiol, B. Bonnard, J. Rouot. "Optimal strokes at low Reynolds number : a geometric and numerical study of Copepod and Purcell swimmers". SIAM J. Control Optim., **56** (3), (2018) pp. 1794–1822. <http://hal.inria.fr/hal-01326790>

Conference paper

J.-B. Caillau, L. Dell'Elce, J.-B. Pomet, J. Rouot. "Optimal control of slow-fast mechanical systems. Proceedings of the Complex Systems Academy of Excellence", Nice (2018) pp.105–116 <http://hal.inria.fr/hal-01953337>