

Montani Giovanni

Position: ENEA Researcher displaced at ICRANet
Period covered: 2005/10



I Scientific Work

Fundamental General Relativity, Quantum Gravity, Extra-dimensional physics, Early Cosmology, Plasma Physics

II Conferences and educational activities (2009)

Work With Students

Coordination of a research group within ICRANet on Cosmology, Gravity and Multidimension.
The group is constituted by post-docs, PhD and undergraduates students, and it produces around 10/15 publications per year.

Diploma thesis supervision

4 undergraduate students during 2010 only.

Other Teaching Duties

Lecturer for the "Primordial Cosmology" class.

2010 List of Publications

- R. Benini and G. Montani, "2-D MHD configurations for Accretion Disks around Magnetized Stars", in *Proceedings of the XII Marcel Grossmann Meeting on General Relativity*, Paris (2009).
- V. Lacquaniti, G. Montani and D. Pugliese, "Effective potential approach to the motion of massive test particles in Kaluza-Klein gravity", in *Proceedings of the XII Marcel Grossmann Meeting on General Relativity*, Paris (2009).
- V. Lacquaniti, G. Montani and D. Pugliese, "Massive test particles motion in Kaluza-Klein gravity", *General Relativity and Gravitation*, 104 (2010).
- R. Belvedere, M.V. Battisti, G. Montani, "Quantum suppression of weak Universe anisotropy", in *Proceedings of the XII Marcel Grossmann Meeting on General Relativity*, Paris (2009).
- N. Carlevaro and G. Montani, "Gravitational Instability in Presence of Bulk Viscosity: the Jeans Mass and the Quasi-Isotropic Solution", in *Proceedings of the XII Marcel Grossmann Meeting on General Relativity*, Paris (2009).
- F. Cianfrani and G. Montani, "On the Removal of Time-Gauge in Loop Quantum Gravity, with and without Matter", in *Proceedings of the XII Marcel Grossmann Meeting on General Relativity*, Paris (2009).
- M.Lattanzi and G. Montani, "A Separable Solution for the Oscillatory Structure of Plasma in Accretion Disks", *Europhysics Letters* 89, 39001 (2010).
- V.Lacquaniti, G.Montani, "Restated dynamics for particles and field in a 5D framework", in *Proceeding of XII Marcel Grossmann Meeting*, July 2009, Paris.
- V.Lacquaniti, G.Montani, F. Vietri, " Geodesic deviation on a Kaluza-Klein background", in *Proceeding of XII Marcel Grossmann Meeting*, July 2009, Paris.

V.Lacquaniti, G.Montani, D. Pugliese, R. Ruffini, "Effective potential approach to the motion of massive test particles in Kaluza-Klein gravity", in *Proceeding of XII Marcel Grossmann Meeting*, July 2009, Paris.

G. Montani and R. Benini, "Crystalline Structure of Accretion Disk: Features of the Global Model" Submitted to *Physical Review E*

G. Montani and R. Benini, "Viscoresistive MHD configurations of plasma in accretion disks", *General Relativity and Gravitation*, 1 (2010).

R. Benini, M. Lattanzi and G. Montani "Signatures of the neutrino thermal history in the spectrum of primordial gravitational waves", *General Relativity and Gravitation*, 99 (2010).

M.Lattanzi, G. Montani and R. Benini, "A possible signature of cosmic neutrino decoupling in the nHz region of the spectrum of primordial gravitational waves", *Classical and Quantum Gravity* 27:4008 (2010).

R. Benini and G. Montani, "The last ten years of the Mixmaster model" *XII Marcel Grossmann Meeting*, Parigi 12-19 Luglio 2009

M. Lattanzi, G. Montani and R. Benini, "On the Propagation of Gravitational Waves across the Universe: Interaction with the Neutrino Component", *XII Marcel Grossmann Meeting*, Parigi 12-19 Luglio 2009

G. Montani and R. Benini, "2-D MHD Configurations for Accretion Disks around Magnetized Stars", *XII Marcel Grossmann Meeting*, Parigi 12-19 Luglio 2009

F. Cianfrani, G. Montani, M. Muccino, "Semi-Classical Isotropization of the Universe during a de Sitter phase", *Phys. Rev. D*, in press, arXiv:1010.5090.

F. Cianfrani, G. Montani, "Shortcomings of the Big Bounce derivation in Loop Quantum Cosmology", *Phys. Rev. D*, 82, 021501(2010), arXiv:1006.1814.

F. Cianfrani, G. Montani, "Gravity in presence of fermions as a SU(2) gauge theory", *Phys. Rev. D*, 81, 044015(2010), arXiv:1001.2699.

F. Cianfrani, O.M. Lecian and G. Montani, "Fundamentals and recent developments in non-perturbative canonical Quantum Gravity", submitted to *Gen. Rel. Grav.*

O.M. Lecian, G. Montani and N. Carlevaro, "Spinor interactions and non-Riemannian geometry", submitted to *IJMPD*