

Montani Giovanni

Position: ENEA Researcher displaced at ICRANet

Period covered: 2005/09



I Scientific Work

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

II Conferences and educational activities (2009)

XII Marcel Grossmann Meeting, Paris 12 - 18 July 2009

II Italo Pakistan Meeting, Pescara 2009

IV Sino-Italia, Pescara 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

3 undergraduate students during 2009 only.

Other Teaching Duties

Lecturer for the “Primordial Cosmology” class.

2009 List of Publications

N. Carlevaro, O.M. Lecian and G. Montani, “Fermion dynamics by internal and space-time symmetries”, Mod. Phys. Lett. A, 24, 415 (2009).

F. Cianfrani and G. Montani, "Towards Loop Quantum Gravity without the time gauge", *Phys. Rev. Lett.*, 102, 091301 (2009).

F. Cianfrani, G. Montani and S. Zonetti, Definition of a time variable with Entropy of a perfect fluid in Canonical Quantum Gravity, *Class. Quant. Grav.*, 26 125002 (2009)

F. Cianfrani, V. Lacquaniti and G. Montani, "Particles and fields within a unification scheme", *J. Korean Phys. Soc.*, in press.

O.M. Lecian, G. Montani, "Riemannian and non-Riemannian extensions of geometro-dynamics versus Einsteinian gravity", *J. Korean Phys. Soc.*, in press.

N. Carlevaro and G. Montani, "Jeans instability in presence of viscous effects", *Int. J. Mod. Phys. D*, in press.

V. Lacquaniti and G. Montani, "Dynamics of Matter in a compactified 5D Kaluza-Klein Model", *Int. J. Mod. Phys. D*, in press.

F. Cianfrani and G. Montani, "The role of time-gauge in quantizing gravity", in *Proc. of 3rd Stueckelberg Workshop*, in press.

F. Cianfrani and G. Montani, "Review on Extended approaches in the Kaluza-Klein model", in *Proc. of 3rd Stueckelberg Workshop*, in press.

G. Montani, N. Carlevaro, F. Cianfrani and V. Lacquaniti, "Perspective in cosmology, gravitation and multidimensions", in *Proc. of 3rd Stueckelberg Workshop*, in press.

F. Cianfrani, G. Montani and S. Zonetti, "Definition of a time variable with entropy of a perfect fluid in Canonical Quantum Gravity", in *Proc. of 3rd Stueckelberg Workshop*, in press.

N. Carlevaro and G. Montani, "A Novel Approach to Lorentz Gauge Theory", in *Proc. of 3rd Stueckelberg Workshop*, in press.

N. Carlevaro and G. Montani, "The Jeans Mechanism and bulk-viscosity effects", in *Proc. of 3rd Stueckelberg Workshop*, in press.

M.V. Battisti and G. Montani, "Bianchi IX the GUP approach", in *Proc. of 3rd Stueckelberg Workshop*, in press.

M.V. Battisti, R. Belvedere and G. Montani, "Semi-classical isotropization of the Mixmaster Universe", in *Proc. of 3rd Stueckelberg Workshop*, in press.

M.V. Battisti, O.M. Lecian and G. Montani, "GUP vs Polymer quantum Cosmology: the Taub Universe", in *Proc. of 3rd Stueckelberg Workshop*, in press.

V. Lacquaniti, G. Montani and F. Vietri, "Geodesic deviation on a Kaluza-Klein background", in *Proc. of 3rd Stueckelberg Workshop*, in press.

V. Lacquaniti, G. Montani "Recent developments on matter dynamics within the Kaluza-Klein picture", in *Proc. of 3rd Stueckelberg Workshop*, in press.

R. Benini and G. Montani, “Review on the generic cosmological solution near the singularity”, in Proc. of 3rd Stueckelberg Workshop, in press

M.V. Battisti, R. Belvedere and G. Montani, “Semiclassical suppression of the weak anisotropies of a generic Universe”, Europhysics Letters, 86, 69001 (2009)

V. Lacquaniti and G. Montani, “Geometry and Matter Reduction in a 5D Kaluza-Klein Framework”, Mod. Phys Lett. A, in press

V. Lacquaniti, G. Montani and F. Vietri, “Dimensional Reduction of the 5D Kaluza-Klein Geodesic Deviation Equation”, Gen. Rel. Grav., (2009)
DOI 10.1007/s10714-009-0853-3.

M.V. Battisti and G. Montani, “The Mixmaster Universe in a generalized uncertainty principle framework”, Phys. Lett. B., 681, 179-184 (2009)

F. Cianfrani, G. Montani, “Matter in Loop Quantum Gravity without time gauge: a non-minimally coupled scalar field”, Phys. Rev. D, 80, 084045 (2009).

F. Cianfrani, G. Montani, “Immirzi parameter from an external scalar field”, Phys. Rev. D, 80, 084040 (2009).

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 and G. Montani, “Spinor interactions and non-Riemannian geometry”, submitted to J. Math. Phys.

G. Montani e R. Benini, “Linear Two-dimensional MHD of Accretion disks: Crystalline structure and radial matter infall”, submitted to MPLA