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Fakultät für Mathematik

VORTRÄGE

15:45 Uhr Kaffeejause

Mittwoch, 15. Juni 2016 von 16:15 bis 17:00 Uhr, Sky Lounge, OMP 1
Mathematisches Kolloquium: Roland Steinbauer (Univ. Wien):"The Singularity Theorems of General Relativity in Low Regularity"

Abstract: General Relativity - Albert Einstein's theory of space, time and gravitation-has not only just celebrated its centenary but has seen the direct confirmation of one its most spectacular predictions a few weeks ago: the emission of gravitational waves from a binary black hole merger. At the mathematical core of GR lies Lorentzian geometry, which traditionally has been formulated in the smooth category. However, as a physical theory GR rests upon field equations and questions of regularity are crucial. While this mismatch has been out of focus for a long time, recent years have seen an increasing interest in Lorentzian geometry in low regularity. In this talk we report on a long-term project devoted to the study of Lorentzian geometry with a non-smooth metric tensor. On the one hand we have explicitly studied relevant model geometries with metrics of e.g. locally Lipschitz or merely distributional regularity, most notably impulsive gravitational waves. In such geometries which provide a simple model for the propagation of short but violent bursts of gravitational radiation, we have established results on geodesic completeness hence showed that they are free of space time singularities. On the other hand the famous singularity theorems of Penrose and Hawking provide physically realistic criteria which lead to the presence of singularities. While the classical proofs only work in the case of smooth (actually C2-)metrics the conceptionally most satisfying and natural regularity class for these results is C{1,1} (i.e., the first order derivatives of the metric being locally Lipschitz). We develop causality theory in this regularity class and combine it with a regularisation technique adapted to the light cone structure of the spacetime to provide proofs for both the Hawking and the Penrose singularity theorem in C{1,1}. Finally we discuss further prospects and future lines of research in this area.

im Anschluss vinum cum pane

Herwig Hauser, Nils Carqueville, Harald Rindler

Montag, 13. Juni 2016, von 9:00 Uhr bis Freitag, 17. Juni 2016 bis 13.00 Uhr, ESI, Boltzmann Lecture Hall,
ESI-Programme on "Nonlinear Flows"
Workshop 1: "Entropy methods, dissipative systems, and applications"
org. by E. Feireisl (Czech Academy of Sciences, Prague), A. Jüngel (TU Vienna), A. Mielke (WIAS Berlin), G. Savaré (U Pavia), U. Stefanelli (U Vienna), (Details siehe Anhang)

Dienstag, 14. Juni 2016 von 13.15 bis 14:45, Seminarraum 9, 2. OG, OMP 1
Complexe Analysis SE: Siqi Fu (Rutgers Univ.-Camden): "Hearing pseudoconvexity in a Swiss Cheese with ∂"
org. by B. Lamel, M. Reiter
http://complex.univie.ac.at/events/detail-of-event/news/hearing-pseudoconvexity-in-a-swiss-cheese-with-bar-partial/

Dienstag, 14. Juni 2016, 15:00 Uhr bis 16:00 Uhr, BZ 9, 9 OG., OMP 1
AG Biomathematik : Markus Dablander (Univ. Wien): "Boolean models of biochemical networks"
org. by R. Bürger, J. Hermisson
http://homepage.univie.ac.at/Reinhard.Buerger/AGBio.html

Dienstag, 14. Juni 2016, von 15:00 bis 17:00 Uhr, SR 9, 2. OG., OMP 1
Geometry and Analysis on Groups, Research SE: Rémi Coulon (Univ. de Rennes):"Torsion groups acting properly on a CAT(0) cube complex"
org. by G. Arzhantseva, Ch. Cashen
http://www.mat.univie.ac.at/~gagt/abstracts/160614.html

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Dienstag, 14.Juni 2016, von 15:15 bis 16:45 Uhr, TU Dissertantenraum, Freihaus, Turm A, 8. Stock, Wiedner Hauptstraße 8-10, 1040 Wien
AG Diskrete Mathematik Seminar: Michael Wallner: "A half-normal distribution scheme for generating functions"
org. by Ch. Krattenthaler
http://dmg.tuwien.ac.at/nfn/agdm.html

Achtung !! Mittwoch, 15. Juni 2016, von 14:00 bis 15:00 Uhr, Sky Lounge, 12. OG., OMP 1
Geometry and Analysis on Groups, Research SE: Mark Sapir (Vanderbilt Univ.):
"On subgroups of R. Thompson group F"
org. by G. Arzhantseva, Ch. Cashen
http://www.mat.univie.ac.at/~gagt/abstracts/160615.html

Donnerstag, 16. Juni 2016, von 16.00 Uhr bis 18:00 Uhr, Josephinum, SR 8 (Zi.02.101), Währinger Str. 25, 1090 Wien,
KGRC Research Seminar: Neil Barton (KGRC): "(Sub)systems of second-order set theory"
org. by Kurt Gödel Research Center
http://www.logic.univie.ac.at/2016/Talk_06-16_a.html

Donnerstag, 16. Juni 2016, von 16:30 Uhr bis 18:00 Uhr, TU Wien, Wiedner Hauptstr. 8, FH grün, SR 4, 4. OG.
Vienna SE Mathematical Finance and Probability: Mathias Pohl (Univ. Wien):"An Applied Take on Dependence Uncertainty"
http://www.fam.tuwien.ac.at/events/vs-mfp/