

Gravitation and Relativity Division Fachverband Gravitation und Relativitätstheorie (GR)

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Der Fachverband Gravitation und Relativitätstheorie hat sich für diese Tagung den thematischen Schwerpunkt **experimentelle Relativitätstheorie** gesetzt. Alle eingeladenen Hauptvorträge befassen sich mit diesem Thema und auch der von uns gestellte Plenarvortrag befasst sich mit praktischen Anwendungen und Test mittels neuer hochpräziser Uhren.

Zusammen mit dem Fachverband Quantenoptik und der Arbeitsgemeinschaft Philosophie bieten wir auch ein Symposium zum Thema *The Quantum-Classical Divide* an, in dem es ebenfalls um die experimentelle Explorierung dieser Fragestellung geht, aber auch um begriffliche Klärungen.

Darüber hinaus decken wir mit vielen Kurzvorträgen wieder die ganze Breite der Gravitationsphysik von grundlegenden Fragestellungen über Astrophysik und Schwarze Löcher bis hin zur Quantengravitation ab.

Overview of Invited Talks and Sessions

(Lecture rooms: SPA Kapelle and SR220; Posters: SPA Foyer)

Plenary Talks

PV I	Mon	8:30– 9:15	Audimax	Meeting the Energy Challenge — ●STEVE CHU
PV II	Mon	9:15–10:00	Audimax	Reverse-engineering quantum theory: (anti-)matter waves, interferometry, and clocks — ●HOLGER MÜLLER
PV III	Tue	8:30– 9:15	Audimax	Research Data Infrastructures – Challenges, Desires, Incentives — ●MAIK THOMAS
PV IV	Tue	9:15–10:00	Audimax	Isotopic Microprobe Mass Spectrometry — ●MICHAEL J. PELLIN
PV V	Tue	20:00–21:00	Audimax	Das Higgs-Teilchen: Unsichtbares sichtbar und Unmögliches möglich machen — ●FELICITAS PAUSS
PV VI	Wed	8:30– 9:15	Audimax	Sharp versions of Heisenberg’s error-disturbance trade-off — ●REINHARD WERNER
PV VII	Wed	9:15–10:00	Audimax	Resolving and manipulating attosecond processes via strong-field light-matter interactions — ●NIRIT DUDOVICH
PV VIII	Wed	12:10–12:55	Audimax	Quantum Nano-Optics — ●JELENA VUCKOVIC
PV IX	Wed	20:00–21:00	Audimax	Wege durch die Quantenwelt – neue Experimente zur Welle-Teilchen Dualität massiver Materie — ●MARKUS ARNDT
PV X	Thu	8:30– 9:15	Audimax	Atomic and Molecular Reactions in Slow-Motion: Time-Resolved Experiments with XUV and IR Laser Pulses — ●ROBERT MOSHAMMER
PV XI	Thu	9:15–10:00	Audimax	Relativistic Geodesy with Optical Clocks — ●TANJA E. MEHLSTÄUBLER
PV XII	Thu	20:00–21:00	Audimax	The Scientists Go to War: Questions, Contexts and Consequences, 1914-1918 — ●ROY MACLEOD
PV XIII	Fri	8:30– 9:15	Audimax	From Astrophysics to Life: The Making of Habitable Planets — ●MANUEL GÜDEL
PV XIV	Fri	9:15–10:00	Audimax	Quantum networks based on diamond spins: from long-distance teleportation to a loophole-free Bell test — ●RONALD HANSON

Invited Talks

GR 2.1	Mon	11:25–12:10	SPA Kapelle	Modern tests of Special Relativity using cryogenic electromagnetic resonators — ●ACHIM PETERS
GR 4.1	Mon	14:00–14:45	SPA SR220	Fundamental Physics with Matter Waves — ●ERNST M. RASEL
GR 8.1	Tue	10:30–11:15	SPA SR220	Measuring the frame-dragging effect with LAGEOS, LARES and other satellites — ●ROLF KOENIG
GR 10.1	Tue	14:00–14:45	SPA SR220	Gaia: the project, its status and scientific promises — ●SERGEI KLIONER
GR 20.1	Thu	14:00–14:45	SPA SR220	Quantum & Gravitation — ●HARTMUT ABELE
GR 23.1	Thu	16:30–17:15	SPA SR220	Schrödinger’s Mirrors: confronting quantum physics with gravity — ●MARKUS ASPELMEYER

Invited talks of the joint symposium SYQC

See SYQC for the full program of the symposium.

SYQC 1.1	Thu	10:30–11:00	Audimax	Experimental tests of quantum macroscopicity — ●MARKUS ARNDT
SYQC 1.2	Thu	11:00–11:30	Audimax	From classical instruments to quantum mechanics and back — ●REINHARD F. WERNER
SYQC 1.3	Thu	11:30–12:00	Audimax	Correlations and the quantum-classical border — ●DAGMAR BRUSS, ALEXANDER STRELTSOV, HERMANN KAMPERMANN
SYQC 1.4	Thu	12:00–12:30	Audimax	Why Physics Needs a Classical World...and How It Can Get One — ●TIM MAUDLIN

Sessions

GR 1.1–1.1	Mon	10:30–11:25	SPA Kapelle	General discussion
GR 2.1–2.1	Mon	11:25–12:10	SPA Kapelle	Main talk: Experimental Gravitation
GR 3.1–3.1	Mon	12:10–12:30	SPA Kapelle	Experimental Gravitation I
GR 4.1–4.1	Mon	14:00–14:45	SPA SR220	Main talk: Experimental Gravitation
GR 5.1–5.4	Mon	14:45–16:05	SPA SR220	Experimental Gravitation II
GR 6.1–6.3	Mon	16:30–17:30	SPA SR220	Gravitational waves
GR 7.1–7.4	Mon	17:30–18:50	SPA SR220	Quantum Gravity and Quantum Cosmology I
GR 8.1–8.1	Tue	10:30–11:15	SPA SR220	Main talk: Experimental Gravitation
GR 9.1–9.4	Tue	11:15–12:35	SPA SR220	Classical theory of General Relativity I
GR 10.1–10.1	Tue	14:00–14:45	SPA SR220	Main talk: Experimental Gravitation
GR 11.1–11.2	Tue	14:45–15:25	SPA SR220	Relativistic Astrophysics
GR 12.1–12.2	Tue	15:25–16:05	SPA SR220	Classical theory of General Relativity II
GR 13.1–13.3	Tue	16:30–17:30	SPA SR220	Classical theory of General Relativity III
GR 14.1–14.2	Tue	17:30–18:10	SPA SR220	Alternative classical theories of gravitation I
GR 15.1–15.2	Tue	18:10–18:50	SPA SR220	Other topics
GR 16.1–16.6	Wed	14:00–16:00	SPA SR220	Black Holes I
GR 17.1–17.3	Wed	16:30–17:30	SPA SR220	Black Holes II
GR 18.1–18.2	Wed	17:30–18:10	SPA SR220	Fundamental problems and general formalism
GR 19.1–19.1	Wed	18:10–18:30	SPA SR220	Cosmology
GR 20.1–20.1	Thu	14:00–14:45	SPA SR220	Main talk: Experimental Gravitation
GR 21.1–21.3	Thu	14:45–15:45	SPA SR220	Experimental Gravitation III
GR 22.1–22.1	Thu	15:45–16:05	SPA SR220	Numerical Relativity I
GR 23.1–23.1	Thu	16:30–17:15	SPA SR220	Main talk: Experimental Gravitation
GR 24.1–24.3	Thu	17:15–18:15	SPA SR220	Numerical Relativity II
GR 25.1–25.1	Fri	10:30–10:50	SPA SR220	Classical theory of General Relativity IV
GR 26.1–26.2	Fri	10:50–11:30	SPA SR220	Alternative classical theories of gravitation II
GR 27.1–27.2	Fri	11:30–12:10	SPA SR220	Quantum Gravity and Quantum Cosmology II
GR 28.1–28.6	Mon	8:30– 8:30	SPA Foyer	Poster (permanent)

Welcome evening

On Monday, 17th of March 2014, from 19.30 till 22.00 h, there will be an informal welcome evening with snacks and drinks (location: Mensa Nord, Hannoversche Strasse 7). All registered conference participants are cordially invited to take this opportunity of rekindling old contacts and making new ones.

Please wear your name tag for free entrance, which you will receive when registering.

Annual General Meeting of the Gravitation and Relativity Division

Donnerstag, 27. März 2014 18:20–19:30 Uhr SPA SR220

- Eröffnen und Festsetzen der engültigen Tagesordnung
- Bericht des Vorsitzenden
- Wahl des/der Vorsitzenden des FV
- Wahl des Beirates des FV
- Vergangene Aktivitäten
- Zukünftige Aktivitäten
- Koordinierte Forschung auf dem Gebiet der Gravitationsphysik in Deutschland
- Dissertationspreis
- Gründung der Sektion Materie und Kosmos SMuK
- Verschiedenes