EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Mathematisch-Naturwissenschaftliche Fakultät

Fachbereich Mathematik
AB Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **07.11.2024** spricht um **14 Uhr s.t.** im Raum **S9 (C6H05) und über Zoom**

Dr. Philip Schwartz
(Leibniz University Hannover)

über das Thema

Geometric descriptions of (post-)Newtonian modified gravity

Newton--Cartan gravity is a differential-geometric reformulation of Newtonian gravity, bringing the latter closer to general relativity (GR): as in GR, gravitational effects are encoded into spacetime geometry, which however is of non-Lorentzian nature. Newton—Cartan gravity can be shown to arise as Newtonian limit of GR in a rigorous sense, hence providing a coordinate-free geometric formulation of this limiting process.

In this talk, we will discuss recent advances in analogous geometric descriptions of the Newtonian behaviour of modified theories of gravity. Concretely, after giving an introduction to standard Newton--Cartan gravity, we are going to discuss the construction of a `teleparallelised' version of Newton--Cartan gravity. We show how this theory arises as a formal large-speed-of-light limit of the so-called teleparallel equivalent of general relativity (TEGR). Thus, it provides a geometric formulation of the Newtonian limit of TEGR, analogous to the GR case.

We end with an outlook on extensions to (a) post-Newtonian expansions, and (b) more general modified theories of gravity.

Den Zoom-Link erhalten Sie per E-Mail von Martina Neu.

For participating online, please sign up by sending an email to Martina Neu.

Hierzu wird herzlich eingeladen.

Rodrigo Avalos, Carla Cederbaum, Gerhard Huisken, zusammen mit Jan Metzger (Potsdam)