

**MP 4: HV Gravitation (gemeinsam mit GR)**

Time: Tuesday 9:30–11:30

Location: H 2013

**Invited Talk** MP 4.1 Tue 9:30 H 2013  
**Characteristic Cauchy problems in general relativity** —  
•PIOTR CHRUSCIEL — Gravitational Physics, University of Vienna

I will discuss various aspects of the general relativistic Cauchy problem on light-cones, including the case where the vertex of the light-cone is located at past timelike infinity.

**Invited Talk** MP 4.2 Tue 10:10 H 2013  
**Mass and center of mass of asymptotically flat spaces** —  
•GERHARD HUISKEN — Fachbereich Mathematik, Universität Tübingen, Auf der Morgenstelle 10, 72076 Tübingen

The lecture describes geometric constructions for the mass and the

center of mass of isolated systems on asymptotically flat 3-manifolds. In particular, recent existence and uniqueness results for radial foliations satisfying conditions on the mean curvature of their leaves are presented and discussed in relation to their physical interpretation.

**Invited Talk** MP 4.3 Tue 10:50 H 2013  
**Loop quantum gravity – an unusual QFT** — •HANNO SAHLMANN  
— Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

I give a short introduction to loop quantum gravity, emphasizing the similarities and differences to other quantum field theories. Then I will highlight some recent developments regarding the dynamics of the theory and the description of black holes.