



# EINLADUNG

im Rahmen des Literaturseminars

zum Vortrag von

**Gilbert WEINSTEIN**  
(Ariel University)

über

***“The mass angular momentum inequality”***

**Abstract:**

We show that either there is a counterexample to black hole uniqueness, in the form of a regular axisymmetric stationary vacuum spacetime with an asymptotically flat end and multiple degenerate horizons which is ‘ADM stable’, or the following statement holds. Complete, simply connected, maximal initial data sets for the Einstein equations with multiple ends that are either asymptotically flat or asymptotically cylindrical, admit an ADM mass lower bound given by the square root of total angular momentum, under the assumption of nonnegative energy density and axisymmetry. Moreover, equality is achieved bound only for a constant time slice of an extreme Kerr spacetime. The proof is based on a novel flow of singular harmonic maps with hyperbolic plane target, under which the renormalized harmonic energy is monotonically nonincreasing. Relevant properties of the flow are achieved through a refined asymptotic analysis of solutions to the linearized harmonic map equations.

This is joint work with Qing Han, Marcus Khuri, and Jingang Xiong.

---

**Zeit: Mittwoch, 11.9.2024, 11:00h**

**Ort: Erwin-Schrödinger-Hörsaal, Boltzmannngasse 5, 1090 Wien, 5.Stock**

<https://univienne.zoom.us/j/6540036841?pwd=SytyVkZJZzNyRG9lMm13ejlHeHRRUT09>