CARL VON OSSIETZKY universität OLDENBURG
FAKULTÄT V
MATHEMATIK UND NATURWISSENSCHAFTEN

Institut für Physik

Theoriekolloquium

Am **14. Juli 2011** um **14.15 Uhr** in **W2 1-143** hält

Herr Prof. Dr. Marcus Ansorg (Jena)

einen Vortrag mit dem Titel

On the Solution Space of Differentially Rotating Neutron Stars in General Relativity

A highly accurate, multi-domain spectral code is used in order to construct sequences of general relativistic, differentially rotating neutron stars in axisymmetry and stationarity. For bodies with a spheroidal topology and a homogeneous or an N=1 polytropic equation of state, we investigate the solution space corresponding to broad ranges of degree of differential rotation and stellar densities. In particular, starting from static and spherical configurations, we analyse the changes of the corresponding surface shapes as the rate of rotation is increased. For a sufficiently weak degree of differential rotation, the sequences terminate at a mass-shedding limit, while for moderate and strong rates of differential rotation, they exhibit a continuous parametric transition to a regime of toroidal fluid bodies. In this talk, we concentrate on the appearance of this transition and analyse in detail its occurrence.

Interessierte sind herzlich eingeladen.

gez. Prof. Dr. Jutta Kunz