

- **Rothe, Viktoria: Semilinear wave equations and the Yamabe problem on Lorentzian manifolds (203)**

In this talk we will discuss some local and almost global existence theorems for semilinear wave equations on globally hyperbolic Lorentzian manifolds. In particular, we will consider the Yamabe problem on 3+1-dimensional Lorentzian manifolds: Given a metric  $g$  on a Lorentzian manifold, find a metric which is conformal to  $g$  with constant scalar curvature. This problem is equivalent to finding a positive smooth solution to the Yamabe equation. We will examine under which conditions we can find such a solution for all times in a given compact interval.