ESI Erwin Schrödinger International Institute for Mathematics and Physics

universität wien

DVR 0065528

Seminar

Prof. Juan Valiente-Kroon

Queen Mary College, London

On the construction of anti-de Sitter-like spacetimes

Thursday, August 24, 2017

at 15:30 h

ESI, Boltzmann Lecture Hall

Abstract: In this talk I discuss a new approach to the systematic construction of 4-dimensional anti-de Sitter-like spacetimes in the tracefree matter and vacuum cases by means of an initial-boundary value problem for Friedrich's conformal field equations. This construction allows to prescribe as Dirichlet boundary data the 3-metric of the conformal boundary of the spacetime and contains, as a particular case, reflective boundary conditions. The hyperbolic reduction of the conformal equations used in the analysis leads to wave equations for the various conformal fields and makes use generalised harmonic coordinates and is close in spirit to the framework often used in numerical Relativity. Accordingly, it is hoped it will be simpler to implement numerically than other conformal approaches to the construction of anti-de Sitter-like spacetimes.

R. Beig

August 17, 2017