

Dirichlet-to-Neumann map for Poincare-Einstein metrics

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Abstract

An analogue of the classical Dirichlet-to-Neumann map will be described for a non-linear boundary problem in which the unknown is an asymptotically hyperbolic metric and the partial differential equation is Einstein's equations. The linearized map at the sphere will be identified leading to a description of the structure of the nonlinear map nearby. An application to the LeBrun/Biquard positive frequency conjecture/theorem will be given.