UNIVERSITÀ DI PAVIA
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The Dirichlet-to-Neumann map for the wave equation on AdS spacetimes and holography

Abstract: In the setting of the wave equation on asymptotically anti-de Sitter spacetimes, it is possible to define an operator which maps Dirichlet data of solutions to corresponding Neumann data at the conformal boundary. The Dirichlet-to-Neumann map (or the boundary-to-boundary propagator) is conjectured to determine the bulk metric up to trivial transformations. In this talk I will report on recent progress on this question, based on the proof that the Dirichlet-to-Neumann map is a fractional power for the boundary metric in a suitable sense. In particular I will discuss the case of Einstein AdS spaces in which case we can prove stronger statements (joint work with Alberto Enciso and Gunther Uhlmann).