Asymptotics of solutions of the wave equation on de Sitter and de Sitter-Schwarzschild spaces

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Abstract

We analyze the wave equation on manifolds X with boundary Y, equipped with a Lorentzian metric g in the interior, which of the form $g = \frac{dx^2 - h}{x^2}$ near Y, where x is a boundary defining function, and $h|_{x=0}$ is a Riemannian metric on Y. De Sitter space is an example, hence these are called asymptotically de Sitter-like spaces. In particular, we describe the asymptotic behavior of solutions at Y.

In the second part of the talk the extension of these results to de Sitter-Schwarzschild spaces is discussed. This is joint work with Richard Melrose and Antonio Sa Barreto.

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