Radiation fields for wave equations

Dean Baskin
Texas A&M University, Department of Mathematics, Mailstop 3368, 77843 College Station, TX, USA
dbaskin@math.tamu.edu

Radiation fields are rescaled limits of solutions of wave equations near "null infinity" and capture the radiation pattern seen by a distant observer. They are intimately connected with the Fourier and Radon transforms and with scattering theory. In this talk, I will define and discuss radiation fields in a few contexts, with an emphasis on spacetimes that look flat near infinity. The main result is a connection between the asymptotic behavior of the radiation field and a family of quantum objects on an associated asymptotically hyperbolic space. This talk is based on joint work with Jeremy Marzuola, Andras Vasy, and Jared Wunsch