

A PARAMETRIX FOR THE FUNDAMENTAL SOLUTION OF THE WAVE EQUATION ON ASYMPTOTICALLY DE SITTER MANIFOLDS

In the talk, I will discuss an ongoing project to understand the microlocal and asymptotic behavior of the fundamental solution of the wave and Klein-Gordon equations on asymptotically de Sitter-like manifolds. Melrose and Uhlmann provided a microlocal characterization of the fundamental solution of a real principal type operator (with several global conditions, satisfied here) as an element of a calculus of paired Lagrangian distributions. We extend this calculus to manifolds of this type and then use it to understand the asymptotic behavior of solutions of $(\square - \lambda)u = f$ in terms of the asymptotic behavior of f . If time permits, I will also discuss potential applications of my work to nonlinear wave equations.