

Propagation of singularities in subelliptic PDEs

Cyril LETROUIT

Abstract

In this talk, we consider the wave equation where the Laplacian is replaced by a sub-Laplacian (also called “Hörmander sum of square”), which is an hypoelliptic operator. We handle the problem of describing the propagation of singularities in such equations: the main new phenomenon that we describe is that singularities can propagate along abnormal curves at any speed between 0 and 1. We then illustrate it on an example, the Martinet case, following a joint work with Y. Colin de Verdière. Our statements illustrate a classical/quantum correspondance between sub-Riemannian geometry and sub-Laplacians, in which abnormal curves play an important role.