A PANORAMA OF SINGULAR SUB-LAPACIANS AND THEIR SPECTRA

MARCELLO SERI

Laplace-Beltrami operators on rank-varying sub-Riemannian structures have been recently gaining interest due to their exotic properties; this talk is an invitation for the audience to explore them. We will start from the 0th property of their analysis: self-adjointness. In many cases, and in contrast with the Riemannian case, the sub-Riemannian setting presents large families of operators which are essentially self-adjoint even though the manifold is non-complete.

We will then move on to present a panoramic view of what little is known about their spectral properties, with a particular emphasis on sub-Riemannian Weyl laws. Throughout the talk we will touch upon a number of simple-to-state open questions to stimulate the participants' interest and foster future discussions.