

Spectral geometry of sub-Riemannian manifolds

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Laplace-Beltrami operators on rank-varying sub-Riemannian structures have been recently gaining interest due to their numerous exotic properties. In this talk I will use some simple low-dimensional examples to introduce sub-Riemannian geometry and the main properties of their Laplace-Beltrami operators. I will discuss their 0th property, self-adjointness, to emphasise how they can differ from the usual Riemannian ones and then move on to present a panoramic of what (little) is known about their spectral properties hinting at some of the main current open problems on the way.