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## **Molecules as metric measure spaces with lower Kato Ricci curvature**

Joint work with Batu Güneysu (Humboldt University of Berlin)

### Abstract

In this talk we shall present a new result which connects the analysis of the Schrödinger semigroup associated to a molecule to the theory of metric measure spaces with lower Ricci curvature bounds. We show that the ground state transformation associated to this molecule creates naturally a metric measure space which has lower Ricci curvature bounds in terms of a Kato class function. This has numerous applications, for instance we show stochastic completeness of the corresponding metric measure space, and we also demonstrate that this setting is good enough to drive it semigroup gradient estimates using a variant of the Bismut derivative formula.