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Aula petita del CRM

**Quadratic estimates for first order systems
and the square root problem of Kato**

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ABSTRACT: I will present a survey on the Kato problem for second order elliptic operators, and show how it can be proved using quadratic estimates for first order systems. I will include recent results with Andrew Morris for the Kato problem on Riemannian manifolds which are embedded in Euclidean space. These quadratic estimates generalise those required to bound the Cauchy integral on a Lipschitz graph.