VIRTUAL EAST-WEST SCV SEMINAR

January 26, 2021

Brian STREET
University of Wisconsin, Madison

Convenient coordinates

We discuss the method of picking a convenient coordinate system adapted to vector fields. Let $X_1, ..., X_q$ be either real or complex C^1 vector fields. We discuss the question of when there is a coordinate system in which the vector fields are smoother (e.g. C^m or C^∞, or real analytic). By answering this in a quantitative way, we obtain coordinate charts which can be used as generalized scaling maps. When the vector fields are real this is joint work with Stovall, and continues in the line of quantitative sub-Riemannian geometry initiated by Nagel, Stein, and Wainger. When the vector fields are complex one obtains a geometry with more structure which can be thought of as "sub-Hermitian".