1139-28-396   **Sean Li*** (`sean.li@uconn.edu`). *Traveling salesman and singular integrals.*
In 1977, Calderon proved that the Cauchy transform is bounded as a singular integral operator on the L_2 space of Lipschitz graphs in the complex plane. This subsequently sparked much work on singular integral operators on subsets of Euclidean space. Due to the deep works of David, Jones, Semmes, and many others, it is now known that the boundedness of singular integrals of certain odd kernels is intricately linked to a rectifiability structure of the underlying sets.

The 1-rectifiability of sets in the Heisenberg group has an almost tight characterization via an analyst's traveling salesman theorem which measures deviations of the set from "horizontal lines". We use this to study the connection between singular integrals and rectifiability for 1-dimensional subsets of the Heisenberg group where we find a similar connection to the Euclidean case. However, the kernels studied turn out to be positive and even, in stark contrast with the Euclidean setting. We also describe a recent 1-sided extension of the traveling salesman theorem to general Carnot groups.

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