MSRI–Evans Talk

Nov. 15 **Steven G. Krantz**, Washington University, St. Louis, and MSRI

Analysis on the Worm Domain

In 1977 Klas Diederich and John Erik Fornaess produced a stunning example—the worm domain—to provide a counterexample to a longstanding conjecture about the geometry of domains in complex space. In more recent years, the worm domain has proved to be important in other contexts, particularly in the study of the $\overline{\partial}$-Neumann problem. As an instance, in 1996 Michael Christ proved that the important Condition R of holomorphic mapping theory fails on the (smooth) worm domain.

In joint work with Marco Peloso, we study the harmonic analysis of the (non-smooth) worm domain. In particular, we calculate the Bergman kernel and study mapping properties of the Bergman projection.