

VIRTUAL EAST-WEST SCV SEMINAR

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Mei-Chi SHAW
University of Notre Dame

HOLOMORPHIC APPROXIMATION IN COMPLEX ANALYSIS

Holomorphic approximation plays a fundamental role in complex analysis. In this talk, we study holomorphic approximation, or more generally, approximation of $\bar{\partial}$ -closed forms in one and several complex variables. The classical Runge theorem and the Mergelyan property are extended to domains in complex manifolds. We characterize the Runge and the Mergelyan property in terms of certain Dolbeault cohomology groups and geometric conditions. Holomorphic approximation is also naturally related to the mixed boundary problems for $\bar{\partial}$ on annuli and vanishing of the associated Dolbeault cohomology groups actually characterizes the Runge property of the domain. (Joint work with Christine Laurent-Thiébaud).
