TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

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Stein spaces with spherical CR boundaries and their hyperbolic metrics

by Xiaojun Huang

Rutgers University

Abstract: Let Ω be a Stein space (of complex dimension at least two) with possibly isolated singularities and a connected compact strongly pseudoconvex smooth boundary $M = \partial\Omega$. Let (f, D) be a non-constant CR mapping, where D is an open connected subset of M. Suppose that (f, D) admits a CR continuation along any curve in M and for each CR mapping element (g, D^*) with $D^* \subset M$ obtained by continuing (f, D) along a curve in M, it holds that $\|g\| \leq C$ for a certain fixed constant C. Then (f, D) admits a holomorphic continuation along any curve γ with $\gamma(0) \in D$ and $\gamma(t) \in \mathrm{Reg}(\Omega)$ for $t \in (0, 1]$. Moreover, for any holomorphic mapping element (h, U) with $U \subset \mathrm{Reg}(\Omega)$ obtained from continuation of (f, D), we have $\|h\| < C$ on U.