

**Title :** Analytic continuation for germs of holomorphic maps between bounded symmetric domains

**Abstract :** Bounded symmetric domains are the Harish-Chandra realizations of Hermitian symmetric manifolds of the semisimple and noncompact type as bounded domains, e.g., the complex unit ball is the Harish-Chandra realization in the rank-1 case. We will examine various techniques for the analytic continuation of germs of holomorphic maps satisfying certain geometric constraints. These constraints may arise from Algebraic Geometry or from Complex Differential Geometry. The case of  $f: (D;0) \rightarrow (\Omega;0)$  between bounded symmetric domains  $D \subset \mathbb{B}^n_{\mathbb{C}}$  and  $\Omega \subset \mathbb{B}^N_{\mathbb{C}}$  in their Harish-Chandra realization is of particular interest because of applications to the study of finite-volume quotients of bounded symmetric domains, which are quasi-projective manifolds very often corresponding to moduli spaces of algebro-geometric objects, and because the dual compact case is a prototype for the study of holomorphic maps between Fano manifolds of Picard number 1 equipped with varieties of minimal rational tangents. We will discuss (a) the extension principle for germs of holomorphic maps respecting geometric structures, where in the Hermitian locally symmetric case the geometric structure, which is defined by a reduction of the frame bundle, is equivalently defined by varieties of special tangent vectors, (b) Alexander-type extension theorems for irreducible bounded symmetric domains of dimension  $\geq 2$  and of arbitrary rank with applications to the problem of characterization of holomorphic germs of measure-preserving maps, and (c) extension theorems for holomorphic isometries with respect to the Bergman metric up to normalizing constants, revolving around functional equations given by Calabi's notion of the *diastasis* and the use of extremal functions