THE UNIVERSITY OF HONG KONG

Institute of Mathematical Research
Department of Mathematics

GEOMETRY SEMINAR

Linear Subvarieties of certain Flag Domains on Projective Spaces and Rigidities of Holomorphic Mappings

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Abstract

Let G be a simple complex Lie group and P be a parabolic subgroup. A flag domain on the rational homogeneous space (flag manifold) G/P is an open orbit of a real form G_0 of G. An example is the domain $\mathbb{D}_n^\ell \subset \mathbb{P}^n$ defined by $\sum_{i=0}^{\ell} |z_i|^2 > \sum_{i=\ell+1}^{n} |z_i|^2$, where $\ell \geq 0$ and $[z_0, \ldots, z_n]$ are homogeneous coordinates. It is not difficult to see that when $\ell \geq 1$, the domain $\mathbb{D}_n^\ell$ contains some linear subvarieties. In the study of holomorphic mappings between these domains, their linear subvarieties could be a source of rigidities. In this talk, we will illustrate this by giving an alternative proof of a theorem of Baouendi and Huang on the rigidity of proper holomorphic maps $f : \mathbb{D}_n^\ell \to \mathbb{D}_m^\ell$.

Date: April 19, 2011 (Tuesday)

Time: 4:00 – 5:00pm

Place: Room 210, Run Run Shaw Bldg., HKU

All are welcome