Mathematics, Statistics, and Computer Science   **@ UIC**

Algebraic Geometry Seminar

Cartan-Fubini type extension of holomorphic maps preserving webs of rational curves

Jun-Muk Hwang (Korea Institute for Advanced Study (KIAS))

Abstract: Let X_1 and X_2 with $\dim X_1 = \dim X_2$ be two projective manifolds of Picard number 1 in projective space. Assume that both X_1 and X_2 are covered by lines. Let $\varphi : U_1 \to U_2$ be a biholomorphic map between two connected Euclidean open subsets $U_1 \subset X_1$ and $U_2 \subset X_2$. Suppose that both φ and φ^{-1} send pieces of lines to pieces of lines. We show that φ can be extended to a biregular morphism $\Phi : X_1 \to X_2$. This was proved by Hwang-Mok in 2001 when the indices of X_1 and X_2 are bigger than 2 and the new result is when the indices are 2. In this case, the covering family of lines form webs of rational curves. We exploit the monodromy of the webs of lines to extend the holomorphic map.

Tuesday, October 21 at 4:00 PM in SEO 636