Holomorphicity of Kobayashi isometry

Anand Chavan
(*Jagiellonian University, Kraków*)

In this talk we will discuss the problem of holomorphicity of Kobayashi isometry. Given a isometry between two domains in complex Euclidean space with respect to their Kobayashi distance/metric, it is an interesting problem to know when is this isometry holomorphic. We will see through few examples that Kobayashi isometry need not be holomorphic and mention some important results in this context. In the end we will show for the domain diamond $\triangle = \{|z_1| + |z_2| < 1\} \subset \mathbb{C}^2$ and special Carathéodory sets of tridisc $D_{a,b} = \{(z, w) \in \mathbb{D}^2 : |az_1 + bz_2 - z_1z_2| < |az_2 + bz_1 - 1|\}$ for $a, b > 0$ the Kobayashi isometry is holomorphic.