

Bingyuan Liu: *Recent progresses in automorphism groups*

Abstract.

Let $\Omega \Subset \mathbb{C}^n$ be a bounded domain. By a 1935 theorem of Cartan, all biholomorphisms from Ω onto Ω form a (real) finite dimensional Lie group, which is denoted by $\text{Aut}(\Omega)$. When $\Omega \Subset \mathbb{C}$ is in complex space of one dimension, the study of $\text{Aut}(\Omega)$ is classical. However, as one considers domains with higher dimensions, $\text{Aut}(\Omega)$ shows both similarity and dissimilarity in terms of algebraic and topological properties comparing with those in one dimension. In this talk, I will give a short introduction and exhibit several recent progresses in the geometry of complex domains with non-compact automorphism groups.