

Extension of isometries of the Kobayashi metric and localization

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Recently, there have been many applications of visibility with respect to the Kobayashi distance in several complex variables, such as the extension of biholomorphisms (Kobayashi isometries) and Wolff–Denjoy type theorems. Furthermore, it has been observed that weak visibility can be used to localize the Kobayashi distance. In this talk, we will discuss some applications of weak visibility and visibility.

We begin by introducing visibility and weak visibility with respect to the Kobayashi distance. Next, we discuss the extension of a biholomorphic map between two domains in complex Euclidean space. To prove this extension phenomenon, we rely on the localization of the Kobayashi distance near visible boundary points. We also explore this localization result, which connects the local and global Kobayashi distances of a domain in the complex Euclidean space.