

Tight maps and tight extension of metric spaces

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A given extension $e : X \rightarrow Y$ is tight provided that for any nonexpansive mapping $f : Y \rightarrow Z$, if the composition fe is an extension then f is necessarily an extension. Given a metric space X , there is always a tight extension $e : X \rightarrow \varepsilon(X)$ such that $\varepsilon(X)$ is maximal with that property. In other words, $\varepsilon(X)$ does not have any proper tight extension. On the other hand, this extension is seen as a hyperconvex hull of X , that is the minimal hyperconvex space (up to isomorphism) which contains X . The construction of the extension $e : X \rightarrow \varepsilon(X)$ has shown that $\varepsilon(X)$ is the set of all tight maps or extremal functions defined on X .

In this talk, the relations between the two concepts will be discussed.