
TONY HUYNH, Université libre de Bruxelles

The forbidden minors for isometric realizability in the plane

We say that a graph G is *universally isometrically realizable* in ℓ_∞^k , if for every metric $d : E(G) \rightarrow \mathbb{R}_+$, there is a collection of points $(q_v)_{v \in V(G)}$ in \mathbb{R}^k such that $\|q_v - q_w\|_\infty = d_{vw}$ for all $vw \in E(G)$. It is easy to show that for each fixed k , the property of being universally isometrically realizable in ℓ_∞^k is minor-closed. We determine the complete set of excluded minors for $k = 2$. The two excluded minors are the wheel on 5 vertices and the graph obtained by gluing two copies of K_4 along an edge and then deleting that edge.

This is joint work with Samuel Fiorini, Gwenaël Joret, and Antonios Varvitsiotis.