Seminario de Geometría y Topología

Inducing maps between Gromov boundaries

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Abstract: It is well known that quasi-isometric embeddings of Gromov hyperbolic spaces induce topological embeddings of their Gromov boundaries. A more general question is to detect classes of functions between Gromov hyperbolic spaces that induce continuous maps between their Gromov boundaries. We introduce the class of visual functions f that do induce continuous maps f' between Gromov boundaries. Its subclass, the class of radial functions, induces Hölder maps between Gromov boundaries. Conversely, every Hölder map between Gromov boundaries of visual hyperbolic spaces induces a radial map. We study properties inherited by f' from the properties of f, especially related to the dimension theory. In particular, we prove a form of the dimension raising theorem. We give a natural example of a radial dimension raising map and we also give a general class of radial maps that raise asymptotic dimension.
This is joint work with Ziga Virk (University of Ljubljana).

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