Seminarium geometrów

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Right-angled Coxeter groups with Menger curve boundary

Abstract: We find a sufficient condition for a nerve N of a hyperbolic RACG W_N, under which the (Gromov) boundary $\partial_\infty W_N$ of the group W_N is homeomorphic to the Menger curve. In view of Anderson's characterisation of the Menger curve and a recent paper by J. Świątkowski, the main problem to solve is to find a condition for non-planarity of the boundary. To this end we show a way to embed non-planar graphs in the boundary $\partial_\infty W_N$ provided that the nerve N satisfies some condition stronger than non-planarity, which is our main technical result. Finally we use our condition to find for some topological spaces such triangulations of them, that give, as the nerve, RACGs with Menger curve boundary.