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SEMINÁRIO DE GEOMETRIA

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Groups acting on CAT (0) polygonal complexes with prescribed local action

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Abstract:

Polygonal complexes play an important role in geometric group theory. Many groups are investigated by considering their action on an associated polygonal complex Y . In the case that Y is locally finite, its full automorphism group, endowed with the compact-open topology, is a totally disconnected locally compact (t.d.l.c) group.

Ballmann and Brin provided a construction of simply-connected polygonal complexes satisfying Gromov's link condition (and hence of non-positive curvature) whose links of vertices are isomorphic to a graph Γ . Recently, Lazarovich proved the uniqueness of such complexes given that some combinatorial hypothesis on the graph Γ are satisfied.

Inspired by the work done for trees by Burger and Mozes and for right-angled buildings done by De Medts, Silva and Struyve, we will define groups acting on CAT(0) polygonal complexes whose local action on the links of vertices is prescribed by a finite permutation group. It will be shown that in some examples the polygonal complexes are buildings but that in the general setting the construction gives rise to a more broad class of t.d.l.c. groups.

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