



Centro de **Matemática**
Universidade do Porto

GEOMETRY AND TOPOLOGY SEMINAR

Date. September 26th, 15h30

Place. Room M004

Speaker. Pedro V. Silva (CMUP)

Title. Polygon hyperbolic spaces.

Abstract. Hyperbolic groups were introduced by Mikhail Gromov in the 80s by considering the geometry of Cayley graphs, viewed as geodesic metric spaces. Several equivalent conditions, due to Gromov and/or Elyahu Rips, are commonly used to characterize hyperbolic geodesic metric spaces. We consider a strengthened version which we call polygon hyperbolicity, and establish equivalent conditions which are variants of the classical alternatives of Gromov. We also characterize those groups whose Cayley graph is a polygon hyperbolic space: they are the finitely generated virtually free groups. These results are joint work with Vítor Araújo (Universidade Federal da Bahia).