

Hyperbolic Coxeter Polytopes

Anna Felikson*

anna.felikson@durham.ac.uk

Hyperbolic Coxeter polytopes are fundamental domains of discrete actions of reflection groups in hyperbolic spaces. Although the classification problem for spherical and Euclidean Coxeter polytopes was solved already in 1934 by H.S.M. Coxeter, similar question in hyperbolic case turned out to be very difficult.

I will overview old and new results concerning classification of hyperbolic Coxeter polytopes and will discuss a range of methods which proved to be useful for different problems. In particular, the methods developed for this classification problem were successfully applied to obtain the classification of quivers of finite mutation type.

Some of the approaches mentioned in the talk are based on joint works with Pavel Tumarkin.

*Department of Mathematical Sciences, Durham University, South Road, Durham, DH1 3LE, UK