Small hyperbolic groups with property (T)

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I will give an example of a finitely presented group which is infinite, hyperbolic and has property (T). Hyperbolicity of the group can be proved by observing geometric actions of the group on its coset graphs. The proof of property (T) uses computer assisted computations to estimate so called *angle between subgroups* and relies on a criterion of Ershov–Jaikin–Zapirain. The group itself comes from a generic construction of 5-fold generalized triangle groups and strengthens a result of Lubotzky–Manning–Wilson.

This talk is based on `https://arxiv.org/abs/2011.09276`, with P-E. Caprace, M. Conder and S. Witzel as coauthors.

Equivariant Khovanov homotopy type

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The Khovanov homotopy type is a space level refinement of Khovanov homology introduced by Lipshitz and Sarkar. The main goal of the talk will be to show that the Khovanov homotopy type can be effectively used to study periodic links, i.e., links which are invariant under a finite order rotation of the three-sphere. In particular, by applying the classical localization theorem for Borel cohomology and its extension we obtain interesting relations between Khovanov homology of a periodic link and Khovanov homology of the quotient.