

# Seminarium geometrów

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## **Applications of representation stability**

**Abstract:** I will give a gentle survey of representation stability, viewed through the lens of its applications in topology and elsewhere. Representation stability is an asymptotic version of representation theory; for example, it captures the behavior of families of representations of permutation groups  $S_n$  as  $n$  goes to infinity.

I will discuss applications to configuration spaces of manifolds; homology of arithmetic groups; the stable mod- $p$  Langlands correspondence; uniform generating sets for congruence subgroups and “congruence” subgroups; and distributional stability for random squarefree polynomials over finite fields. Based on joint work with Ellenberg, Farb, Putman, and Nagpal.