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Research Interests for the Conference in Ventotene

Currently I am interested in the study of lattices Γ in a product of locally compact groups $G_1 \times G_2$. Consider for instance the question of whether there are finitely many discrete subgroups sandwiched between Γ and $G_1 \times G_2$. A special case of a theorem of Wang gives an affirmative answer when G_1 and G_2 are semisimple Lie groups, while examples of Bass-Kulkarni give a negative answer when G_1 is the automorphism group of a regular tree, not of prime degree. Recently we established with S. Mozes finiteness when Γ is co-compact and has dense projections, and $G_i < \text{Aut } T_i$ is a closed non-discrete subgroup of the automorphism group of a regular tree satisfying certain local transitivity properties.

Another, very studied question is the rigidity of Γ -actions on metric spaces satisfying various non-positive curvature conditions. Recently we showed with A. Iozzi that if $\Gamma < G_1 \times G_2$ is a lattice with dense projections and G_i is locally compact without infinite discrete quotients, then any homomorphism of Γ into the mapping class group of an orientable compact surface has virtually abelian image.