VENTOTENE INTERNATIONAL WORKSHOPS VI
GRAZP: GROUPS AND RIGIDITY AROUND THE ZIMMER PROGRAM
VENTOTENE, 11-16 SEPTEMBER 2023

RIGID GEOMETRIC STRUCTURES AND THE ZIMMER PROGRAM

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Zimmer proved his most famous conjecture in 1986 under the assumption that the acting group preserves a rigid geometric structure. A yet more ambitious problem in the Zimmer Program asks to what extent infinite actions of higher-rank semisimple Lie groups and their irreducible lattices all arise from certain algebraic constructions. The reality has been shown to be rather complicated; for actions preserving a rigid geometric structure, however, this original vision lives on. Focusing on lattices in $SL(n,\mathbb{R})$, $n \geq 3$, acting on closed manifolds of dimension $n-1$ or n, I will discuss general and geometric actions in the context of this program.

The talk will touch on joint work with D. Fisher and work of V. Pecastaing.