Let $G$ be a simply-connected (real) Lie group. A lattice $\Gamma$ in $G$ is said to be rigid if every automorphism of $\Gamma$ extends to an automorphism of $G$. Landmark results in the context of semisimple groups are the Mostow Rigidity Theorem and the Margulis Superrigidity Theorem.

In this talk I will report on ongoing joint work with Oliver Baues, concerning rigidity and non-rigidity of lattices in soluble Lie groups. I will start by discussing a classical theorem of Maltsev–Saitô, instructive examples given by Starkov and a result of Witte. Then I will explain our more recent approach towards a ‘quantitative description’ of the phenomenon of non-rigid lattices in soluble Lie groups.