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Large scale geometry of certain solvable Lie groups

In their proof of quasi-isometric rigidity for lattices in SOL, Eskin–Fisher–Whyte develop a technique of “coarse differentiation” to prove a theorem on the structure of quasi-isometries of SOL. This structure theorem combined with a theorem on bilipshitz maps of the real line completes the proof of quasi-isometric rigidity for lattices in SOL. Eskin–Fisher–Whyte and Peng use similar techniques to extend this structure theorem to quasi-isometries of more general solvable Lie groups. We will present the ingredients needed to complete the proof of quasi-isometric rigidity for these more general solvable Lie groups. This involves, among other things, a rigidity theorem on the boundaries of certain negatively curved homogeneous spaces.