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On Compactness properties of subgroups

Results of Herbert Abels show that groups in the class of locally compact groups containing a compact open subgroup admit transitive actions on locally finite graphs with compact open vertex stabilizers. This is analogous to the case of finitely generated discrete groups via Cayley graphs. There is a current program of extending geometric techniques used in the study of discrete groups to this larger class. We will give brief overview of this approach and some of the applications that we obtained regarding compactness properties of subgroups.