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Bounded Packing in Cubulated Groups

Let G be a finitely generated group, and let d_G be the word metric with respect to some finite generating set. Let H be a subgroup of G . We say that H has *bounded packing* in G if for all $R > 0$, there is an upper bound $M(D)$ on the number of left cosets that are D -close. That is to say that if $g_1H, \dots, g_{M(D)}H$ are distinct left cosets, then there exists $1 \leq i < j \leq M(D)$ such that $d_G(g_iH, g_jH) > D$. We prove the bounded packing property for any abelian subgroup of a group acting properly and cocompactly on a CAT(0) cube complex. A main ingredient of the proof is a cubical flat torus theorem.