1059-20-67 **Danny Calegari** (dannyc@caltech.edu) and **Dongping Zhuang*** (dongping.zhuang@vanderbilt.edu).

Large Scale Geometry of Commutator Subgroups.

Let G be a group and G' its commutator subgroup. We study large scale geometry of the Cayley graph $C_S(G')$ of the commutator subgroup G' with respect to the canonical generating set S of all commutators. We prove that there exists quasi-isometrically embedded $\mathbb{Z}^n$ in $C_S(G')$, for any $n \in \mathbb{Z}_+$, thus this graph is not δ-hyperbolic, has infinitely asymptotic dimension and has only one end. For a general finitely presented group, we show that this graph is large scale simply connected. (Received February 15, 2010)