Central extensions and bounded cohomology

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Abstract: Central extensions of a given group G by, say, Z are in bijection with the second cohomology of G.
In light of this bijection, bounded cohomology has something to say about the geometry of a central extension, meaning that if the cohomology class associated to a central extension is bounded, then the extension is quasi-isometrically trivial, so that in particular it is quasi-isometric to a product.
However, it turns out that the converse does not hold, meaning that there are quasi-isometrically trivial extensions whose associated cohomology class is not bounded. I will discuss such an example, and I will also discuss a few large classes of groups where the converse does hold.
Joint work with Roberto Frigerio.