1078-19-202 **Heath Emerson*** (hemerson@uvic.ca), Mathematics and Statistics, University of Victoria, PO Box 3060 STN CSC, Victoria, BC V8W 3R4, Canada, and **Bogdan Nica**. *Dirac classes for crossed-products.* Preliminary report.

We start by discussing when the crossed-product C*-algebra associated to a discrete group acting smoothly on a compact manifold should be considered a noncommutative homology manifold. The condition we suggest is the existence of a certain fundamental K-homology class, which we call the 'Dirac class'. We define Dirac classes, discuss their existence and uniqueness in general, and give several examples. If time permits, we describe a beautiful and simple representative of the Dirac class for a classical hyperbolic group acting on the boundary sphere of hyperbolic space, which uses only ergodic-theoretic considerations of the action (and not differential topology). (Received December 07, 2011)