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**Paul Melvin\*** (pmelvin@brynmawr.edu), Department of Mathematics, Bryn Mawr College, Bryn Mawr, PA 19096, and **S. Friedl, I. Hambleton** and **P. Teichner**. *Topological 4-manifolds with infinite cyclic fundamental group*.

This talk is about the problem of classifying topological 4-manifolds. Recall that Mike Freedman's classification in the simply connected case asserts that every non-singular integral symmetric bilinear form arises as the intersection form of at most two simply connected 4-manifolds. Most of these manifolds are not smoothable, by the work of Simon Donaldson. We will describe, in contrast, how most of these forms arise as the intersection form of infinitely many non-smoothable 4-manifolds with infinite cyclic fundamental group. This is recent joint work with Stefan Friedl, Ian Hambleton and Peter Teichner. (Received August 19, 2008)