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**Joanna Nelson\*** ([nelson@math.ias.edu](mailto:nelson@math.ias.edu)). *Cylindrical contact homology as a well-defined homology?*

In this talk I will then explain how the heuristic arguments sketched in literature since 1999 fail to define a homology theory. These issues will be made clear with concrete examples and we will explore what stronger conditions are necessary on the growth rates of the indices of Reeb orbits. These conditions will enable us to provide a foundation for a well-defined cylindrical contact homology in dimension 3, which does not depend on polyfold machinery. In addition a new approach will be given that allows us to compute cylindrical contact for a large class of examples which admit contact forms that are admissible under the stronger conditions required. This approach is applicable to prequantization spaces and the links of simple singularities. (Received September 09, 2013)