1106-18-1699 **Martina Rovelli***, martina.rovelli@epfl.ch. *A looping-delooping adjunction for topological spaces.*

Farjoun and Hess introduced twisted homotopical categories, a framework for monoidal categories that come with a looping-delooping adjunction between monoids and comonoids, in which a formal theory of bundles is available. Although much of this kind of structure was inspired by classical constructions and results holding for topological spaces, it does not not seem possible to construct a full twisted homotopical structure for spaces. However, we provide a *weak twisted homotopical structure*, by showing that (Milnor's model of) the loop space functor and the classifying space functor form a sort of adjunction between pointed spaces and topological groups. The argument leads to a classification of principal bundles over a fixed space that is dual to the well-known classification of bundles with a fixed group. As a consequence, it is also possible to extend Milnor's loop space construction to a pseudofunctorial assignment. (Received September 15, 2014)