

## Classification of special 2-fold coverings of a $S^1$ -bundle

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**Abstract.** (This is joint work with A. Bauval, D. Gonçalves, M.H. Melo.)  
A special 2-fold covering of a principal  $S^1$ -bundle  $P$  over a oriented surface is also a  $S^1$ -bundle over the same surface with the particularity that its fiber is a square root of the fiber of  $P$ . All these special 2-fold coverings are weakly equivalent in the classical sense. It is necessary to add some constraint to get a classification "à la Johnson", corresponding to the particular case where the  $S^1$ -bundle is the principal bundle associated to the tangent bundle of the surface.