

A Skew Product Map with a Non-Contracting Iterated Monodromy Group

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We will discuss properties of the map $F[x, y] = [(x^2 - y^2)/(x^2 - 1), y^2]$, which is a two-dimensional skew product map induced by an obstructed Thurston map. We will compute its iterated monodromy group, which happens to be non-contracting. The "slices" of this group, corresponding to the fibers of the skew-product, are however contracting. In particular, one can talk about the limit spaces of the slices and their relations to the Julia sets of the fibers of the rational function. It seems, however, that the relation between the limit spaces and the fibers is not straightforward. We will discuss other unusual properties of the map and the associated group.