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Title: *Homotopy dynamics for three dimensional nil and solvmanifolds*

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Abstract: Let $f : X \rightarrow X$ be a map of a compact manifold. We say that $m \in \mathbf{n}$ is a homotopy minimal period if it is a minimal period for every map $g \simeq f$. Since a small perturbation of f is homotopic to it, the set of all homotopy minimal periods reflects the rigid part of dynamics. Recently, a general description of this set has been given for tori, compact nilmanifolds and completely solvable solvmanifolds. They make use of topological tools as the Wecken theorem for periodic points, Anosov theorem, and also of combinatorial and algebraic number theory arguments. If the dimension of such a manifold is 3 then we give a complete list of all sets of homotopy minimal periods due the classification of all homomorphisms of its fundamental group. As a byproduct of the consideration we get a Šarkovskii type theorem for maps of these three manifolds.