Holonomy groups of flat manifolds with R_∞ property

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Let M be a closed Riemannian manifold. We say that M has the R_∞ property if for every homeomorphism $f\colon M \to M$ the Reidemeister number $R(f)$ is equal to ∞. M is flat if, at any point, its sectional curvature is equal to zero.

We investigate a relation between the holonomy representation ρ of a flat manifold M and the R_∞ property of M. In particular we consider the case where the holonomy group of M is solvable. We show that if ρ has – in a given sense unique – $\mathbb{R}$-irreducible subrepresentation of odd degree, then M has the R_∞ property.

The result is related to Conjecture 4.8 from [1].

References

[1] K. Dekimpe, B. De Rock, P. Penninckx, *The R_∞ property for infra-nilmanifolds*, Topol. Methods Nonlinear Anal. 34 (2009), no.2, 353–373