

ON A FIXED POINT THEOREM FOR DIFFERENTIABLE MAPPINGS

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ABSTRACT. We obtain a sufficient condition that the mapping between Riemannian manifolds or Lie groups has fixed points. The condition is "without eigenvalue one". For instance, in the torus case, if $f : T^n \rightarrow T^n$ satisfies $\det(f_{*p} - Id_{\mathbb{R}^n}) \neq 0$ for any $p \in T^n$, then f has fixed points.

REFERENCES

- [1] K. Kawakubo, *The theory of transformation groups*. Oxford etc.: Oxford University Press. x, 338 p. (1991).
- [2] J. Milnor. *Morse Theory*. Annal of Mathematics Studies . Princeton University Press . 1963
- [3] S. Smale. *Differentiable Dynamical System*, Ball.Amer.Math.Soc.73 (1966),491-496
- [4] M. Sugiura, *Theory of Lie Groups*. (in Japanese) Kyoritsu Shuppan Co., Ltd, Tokyo, 2000

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