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Spaces of free loops on real projective spaces. (English) Zbl 1076.55004
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Let $L(X)$ be the free loop space on X . For $X = S^m$ or $\mathbb{R}P^m$ there is a natural decomposition $L_0(X) \amalg L_1(X)$ and natural maps $Q_0^{n,d}(X) \rightarrow L_0(X)$, $Q_1^{n,d}(X) \rightarrow L_1(X)$ where $Q_\varepsilon^{n,d}(X)$, $\varepsilon = 0, 1$ are defined in terms of n -tuples of polynomials with real or complex coefficients, each polynomial having degree $\leq d$, and these maps are D -homotopy equivalences for some D depending on n and d . The author describes, for $n \geq 3$ and $d \geq 0$, the stable homotopy type of the polynomial approximations $Q_\varepsilon^{n,d}(X)$.

Reviewer: [Jean Claude Thomas \(Angers\)](#)

MSC:

[55P35](#) Loop spaces
[55P15](#) Classification of homotopy type

Keywords:

[free loop space](#); [stable rank](#)

Full Text: [DOI](#)