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Some remarks about proper real algebraic maps. (English) Zbl 0964.14046

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This paper presents two properness criteria for real polynomial and analytic maps: a real (multivariate) polynomial represents a proper function if all fibers are compact, a real analytic map $\mathbb{R}^n \rightarrow \mathbb{R}^m$ is proper if its image is closed and all fibers are compact. The authors also show that any C^∞ map from \mathbb{R}^n to \mathbb{R}^m can be approximated in the C^∞ topology by proper polynomial maps.

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MSC:

[14P05](#) Real algebraic sets

[14R15](#) Jacobian problem

[14E05](#) Rational and birational maps

Keywords:

[real polynomial map](#); [proper maps](#); [approximation by polynomials](#); [analytic maps](#)

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