

Piecewise-regular approximation of maps into real algebraic sets

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A real algebraic set W of dimension m is said to be uniformly rational if each of its points has a Zariski open neighborhood which is biregularly isomorphic to a Zariski open subset of \mathbb{R}^m . Let l be any nonnegative integer. It turns out that every map of class \mathcal{C}^l from a compact subset of a real algebraic set into a uniformly rational real algebraic set can be approximated in the \mathcal{C}^l topology by piecewise-regular maps of class \mathcal{C}^k , where k is an arbitrary integer greater than or equal to l .