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**A generalization of Steenrod's approximation theorem.** (English) Zbl 1212.58005  
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**Summary:** In this paper we aim for a generalization of the Steenrod approximation theorem from Section 6.7 in [*J. Steenrod*, *The topology of fibre bundles*. Princeton Landmarks in Mathematics. Princeton, NJ: Princeton University Press (1999; [Zbl 0942.55002](#))] concerning a smoothing procedure for sections in smooth locally trivial bundles. The generalization is that we consider locally trivial smooth bundles with a possibly infinite-dimensional typical fibre. The main result states that a continuous section in a smooth locally trivial bundles can always be smoothed out in a very controlled way (in terms of the graph topology on spaces of continuous functions) preserving the section on regions where it is already smooth.

**MSC:**

[58B05](#) Homotopy and topological questions for infinite-dimensional manifolds Cited in **6** Documents  
[57R10](#) Smoothing in differential topology  
[57R12](#) Smooth approximations in differential topology

**Keywords:**

infinite-dimensional manifold; infinite-dimensional smooth bundle; smoothing; continuous sections; density; space of continuous functions

**Full Text:** [arXiv](#) [EuDML](#) [EMIS](#)