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★**Uniform classification of open manifolds.**

Mathematics Research Developments Series.

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Publisher's description: "A certain classification of open manifolds has been a continuous problem in geometry, topology and global analysis. The background for this is the fact that in any dimension greater than one, there are innumerable homotopy types. A solution to this problem seemed almost hopeless. In this monograph, the author offers an approach by decomposing the classification into two fundamental steps. This book introduces certain uniform structures in the set of all proper metric spaces under consideration (complexes, Riemannian manifolds, etc.), then considers the components of this uniform space by classifying the components by adapted homology theories (Gromov-Hausdorff and Lipschitz cohomology). The author then moves on to classifying the elements inside a component. For the second step, a geometric bordism theory for open manifolds and geometric generators are introduced. The main achievements include the invariance of a spectral gap under uniform homotopy equivalences and the vanishing of the K-theoretic signature in the geometric bordism theory. Concerning surgery, the absolutely fundamental achievements of Maumary and Taylor are included. Repeated motivations and explanations should make this monograph fairly legible to a vast audience."