Characterization of generalized manifolds among compact metric ANR-spaces

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Abstract

After introductory remarks on ANR-spaces and generalized manifolds we shall review some results of S. Mardešić and J. Segal (1963) and S. Ferry (1992). They constructed generalized manifolds as "manifold-like" spaces and inverse limits, respectively. It is still an open question if every generalized manifold can be obtained in this way. An alternative approach will be given in terms of limits of two-patch-spaces introduced by J. Bryant, S. Ferry, W. Mio and S. Weinberger (2007). This provides also a characterization of generalized manifolds as the boundary of a certain subset in the Gromov-Hausdorff space.