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Title: Homology manifolds and euclidean bundles

Abstract:

joint with M.Land, M.Weiss & C.Winges

It is a curious fact of life in geometric topology, that the classification of closed manifolds by surgery theory becomes easier as one passes from smooth to piecewise linear and finally to topological manifolds. It was long conjectured that an even cleaner statement should be expected in the somewhat arcane world of homology manifolds of the title, which ought to fill the role of some "missing manifolds". This was finally proven by Bryant, Ferry, Mio and Weinberger in the 90's in the form a surgery sequence for homology manifolds, building on an earlier theorem of Ferry and Pedersen that any homology manifold admits a euclidean normal bundle. In the talk I will try to explain this surgery sequence, and further that its existence is incompatible with the result of Ferry and Pedersen. The latter is therefore incorrect and/or the proof of the former incomplete.