On the K-category of 3-manifolds for K a wedge of spheres or projective planes

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Abstract

For a complex K, a closed 3-manifold M is of K–category $\leq m$, if it can be covered by m open subsets $W_1, \ldots, W_m$ such that the inclusions $W_i \to M^n$ factor homotopically through maps $W_i \stackrel{f_i}{\to} K \stackrel{\alpha_i}{\to} M$. We compute the K-category of closed 3-manifolds M when K is a wedge of 2-spheres and obtain some results for the K-category of M when K is a wedge of two projective planes.