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论文

A SIMPLIFIED APPROACH TO EMBEDDING PROBLEMS IN NORMAL BORDISM FRAMEWORK

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摘要 The purpose of this paper is to simplify the computations of the normal bordism groups Ω_i (W_f,M×P~∞;\phi_f) and Ω_i(C_f,\partial W;θ_f) which Salomonsen and Dax introduced respectively to study the existence and isotopy classification of differential embeddings of manifolds in manifolds in the metastable range. A simpler space pair (K_f,M×P~∞)is constructed to replace (W_f,M×P~∞). It is shown that(K_f,M×P~∞) is homotopy equivalent to (W_f,M×P~∞)and homotopy (n-1)-equivalent to (C_f,\partial W). To demonstrate the efficacy of this simplification, the isotopy groups [M~n\subset RP~(n+k)], if n\le 2k-4 and M~n is a closed (n-k+2)-connected manifold, and [M~n\subset L(p;q_1…,q_m)], if 3n\le 4m-2,M~n is a closed (2n-2m+1)-connected manifold and L is a (2m+1)-dimensional lens space, are specifically computed.

关键词 Normal bordism group,differential embedd

分类号

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Abstract The purpose of this paper is to simplify the computations of the normal bordism groups Ω_i (W_f,M×P~∞;\phi_f) and Ω_i(C_f,\partial W;θ_f) which Salomonsen and Dax introduced respectively to study the existence and isotopy classification of differential embeddings of manifolds in manifolds in the metastable range. A simpler space pair (K_f,M×P~∞)is constructed to replace (W_f,M×P~∞). It is shown that(K_f,M×P~∞) is homotopy equivalent to (W_f,M×P~∞)and homotopy (n-1)-equivalent to (C_f,\partial W). To demonstrate the efficacy of this simplification, the isotopy groups [M~n\subset RP~(n+k)], if n\le 2k-4 and M~n is a closed (n-k+2)-connected manifold, and [M~n\subset L(p;q_1…,q_m)], if 3n\le 4m-2,M~n is a closed (2n-2m+1)-connected manifold and L is a (2m+1)-dimensional lens space, are specifically computed.

Key words Normal bordism group differential embedding isotopy

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