

CORRECTIONS TO MY PAPER, "SYMMETRIC HOMOLOGY SPHERES"

BY
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1. In *Symmetric homology spheres*,¹ I construct a specific four-manifold W which has the homotopy type of S^4 , and which possesses a two-sphere submanifold $\Sigma \subset W$ whose knot group is $Z + \Delta$, where Δ is a finite group. The manifold W possesses an effective action of the circle group. I asserted that Σ is the fixed-point set of this action. This is false. The two-sphere Σ is left invariant under the action, but the fixed-point set is a zero-dimensional subsphere of Σ . Consequently the higher-dimensional analogues of the Smith Conjectures are still open.

Remark. E. C. Zeeman has informed me that it follows from some results of his that W is actually homeomorphic to S^4 . Therefore the knotted two-sphere Σ provides an example of knotting-phenomena in S^4 which cannot occur in S^3 . Namely, the knot group of Σ contains elements of finite order.

2. I also asserted that Δ is the icosahedral group. This is also incorrect. Rather it is a "double covering" of the icosahedral group. Consequently I cannot use simplicity of Δ to prove that the Poincaré manifold S^3/Δ is a symmetric homology sphere. However, as I assert, one easily checks this without using simplicity.

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¹ Illinois Journal of Mathematics, vol. 6 (1962), pp. 245-250.

