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sphere theorem

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Owner	juanman (12619)
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Author	juanman (12619)
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Theorem 1 (sphere theorem). *If M is a differentiable orientable 3-manifold such that $\pi_2(M)$ is not trivial, then there exists an embedding $S^2 \rightarrow M$ such that its image homotopy class is not equal to zero.*

This theorem was established and proved by C. Papakyriakopoulos in 1957.