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prime n-manifold

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A <http://planetmath.org/TopologicalManifold> n -manifold M is called prime if for all the factorizations of M , as a <http://planetmath.org/ConnectedSum> $M = M_1 \# M_2$, one finds that one of the factors M_1 or M_2 is the n -sphere S^n .

The importance for 3-manifold is the existence and uniqueness prime decomposition theorem which says: Each 3-manifold can be decomposed as a connected sum of prime manifolds.