

# **Wormholes with fluid sources. A no-go theorem and new examples**

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For static, spherically symmetric space-times in general relativity (GR), a no-go theorem is proved: it excludes the existence of wormholes with flat and/or AdS asymptotic regions on both sides of the throat if the source matter is isotropic, i.e., the radial and tangential pressures coincide. Under a simple assumption on the behavior of the spherical radius  $r(x)$ , we obtain a number of examples of wormholes with isotropic matter and one or both de Sitter asymptotic regions, allowed by the no-go theorem. We also obtain twice asymptotically flat wormholes with anisotropic matter, both symmetric and asymmetric with respect to the throat, under the assumption that the scalar curvature is zero. Such solutions may be on equal grounds interpreted as those of GR with a traceless stress-energy tensor and as vacuum solutions in a brane world. As a by-product, we obtain twice asymptotically flat regular black hole solutions with up to four Killing horizons.

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