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Self-energy and self-force on a scalar particle in a wormhole spacetime

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Abstract

We consider the self-energy and the self-force for scalar massless particles at rest in the short-throat flat-spacetime wormhole background. In some limiting cases we found how the sign of the self-energy changes with the non-minimal constant ξ . We found that the self-force is always attractive for the profile of the throat considered. © 2010 World Scientific Publishing Company.

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Keywords

self-energy, Self-force, wormhole spacetime