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On the Wormhole-Warp Drive Correspondence

We propose a correspondence between the Morris-Thorne wormhole metric and a warp drive metric, which generalizes an earlier result by H. Ellis regarding the Schwarzschild black hole metric and makes it possible to embed a warp drive in a wormhole background. We demonstrate that in order to do that, one needs to generalize the Natario–Alcubierre definition of warp drive and introduce nonzero intrinsic curvature. We also analyze the energy requirements for this new type of metric and suggest that it could make it possible to bypass or alleviate the null energy condition violations found in Natario–type models.

Title

On the Wormhole-Warp Drive Correspondence

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Track

SETI, English

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