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**Conformal Gravity and the Alcubierre Warp Drive Metric**<sup>1</sup> GABRIELE VARIESCHI, ZILY BURSTEIN, Loyola Marymount University — We present an analysis of the classic Alcubierre metric based on conformal gravity, rather than standard general relativity. The main characteristics of the resulting warp drive remain the same as in the original study by Alcubierre, namely that effective super-luminal motion is a viable outcome of the metric. We show that for particular choices of the shaping function, the Alcubierre metric in the context of conformal gravity does not violate the weak energy condition, as was the case of the original solution. In particular, the resulting warp drive does not require the use of exotic matter. Therefore, if conformal gravity is a correct extension of general relativity, super-luminal motion via an Alcubierre metric might be a realistic solution, thus allowing faster-than-light interstellar travel.

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