

NEW LOWER BOUNDS FOR WARP DRIVE ENERGY

C. GAUTHIER

*Département de Mathématiques et de Statistique,
Université de Moncton,
Moncton, N.-B., E1A 3E9, Canada*

P. GRAVEL

*Département de Mathématiques et de Science Informatique,
Collège Militaire Royal du Canada,
Kingston, Ontario, K7K 5L0, Canada*

J. MELANSON

*Département de Physique et d'astronomie,
Université de Moncton,
Moncton, N.-B., E1A 3E9, Canada*

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The introduction of the warp drive metric by Alcubierre¹ has aroused great interest over the past few years. Using an uncertainty-type principle, Ford and Pfenning² proved that the warp drive transport of a spaceship in a regular bubble having a radius of 100 m is unrealistic. However, Van Den Broeck³ has shown that the situation largely improves when one uses a warp drive bubble with a small surface area and large spatial volume.

Putting aside many physics problems related to the realization of the warp drive concept, we show in this paper⁴ how to modify Van Den Broeck's idea to improve his results. We find new lower bounds for the warp drive energy by working on parameters whose latitude has never been considered before. We also consider micro warp drive bubbles which can be treated as physical entities of their own and could possibly be used to transmit information faster than the speed of light. The conditions prevailing just after the Big Bang allow the spontaneous formation of such micro bubbles which could still be present in our period of time.

References

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