

Abstract Submitted
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Late-time quadrupolar gravitational wave power in de Sitter space JEFFREY HAZBOUN, Center for Advanced Radio Astronomy, UT Rio Grande Valley — We have calculated the power emitted by a binary system in a cosmological context modeled by a stress energy source on a de Sitter background. The calculation is based on the quadrupole formula for late-time gravitational waves in de Sitter space put forward by Ashtekar, Bonga and Kesavan. There is little reason to expect, a priori, that the projection operator usually used to find the transverse-traceless components of a tensor in asymptotically flat spaces will accurately characterize the physical degrees of freedom in an asymptotically de Sitter spacetime. Instead we use the differential recipe that is true in general, but cumbersome to solve explicitly. The solution presented is based on a conformally transformed version of the quadrupole moment from a Minkowski spacetime for a stable circular binary. A process for calculating the late time power is presented, which coincides with future null infinity. Progress on time dependent results will also be presented. We will discuss the physicality of these results and compare it to other results for gravitational waves in de Sitter space, including recent results on gravitational wave memory.

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