

Prospects for observing extra dimensions in gravitational waves

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For many years, the idea that there may be more than three spatial dimensions in our universe has attracted people's interest. The method by which extra dimensions are concealed, making spacetime essentially four-dimensional as far as known physics is concerned, is a key issue in multidimensional theories. Extra dimensions might be large or infinite, and they might then have consequences that can be seen through experiments. This has motivated us to explore the possibilities of inspecting the extra dimensions through extreme mass-ratio inspirals where the primary object is the braneworld black hole defined with a tidal charge. For such a system, I would discuss the role of the tidal charge parameter in view of hunting the extra dimensions with potential detectability through LISA observations.

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