

Testing black-hole near-horizon effects and pseudo-complex general relativity with gravitational waves

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The detection of gravitation waves by LIGO has allowed a great number of new tests of strong gravity and near-horizon models for black holes. One such model, pseudo-complex general relativity, agrees with Einstein gravity in the weak-field limit, but diverges dramatically in the near-horizon regime, with certain parameter ranges excluding the existence of black holes altogether. We show how simple limits can be placed on this model in both the inspiral and ringdown phase of coalescing compact objects. We discuss how these bounds relate to current observational limits and future prospects with gravitational wave observations and the Event Horizon Telescope.

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