Abstract Submitted
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Application of the modified generalized harmonic formulation to scalar-tensor gravity theories JUSTIN RIPLEY, Univ of Cambridge, WILLIAM EAST, Perimeter Institue — I will discuss a numerical implementation of the recently introduced modified generalized harmonic (MGH) formulation to numerically evolve the equations of motion of Einstein-scalar-Gauss-Bonnet (ESGB) gravity. In the MGH formulation ESGB gravity–along with all other "Horndeski" scalar-tensor gravity theories–has a well-posed initial value problem, which allows for the exact (numerical) solution of the equations of motion in regimes of astrophysical and cosmological interest. I will discuss binary black hole mergers in ESGB gravity using the MGH formulation; time permitting I will discuss potential uses of the MGH formulation in the numerical evolution of other scalar tensor gravity theories in cosmological spacetimes as well.

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