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Prospects of Probing Relativity in the Deci-Hertz Range RHONDALE TSO, YANBEI CHEN , Caltech — Space-based detectors serve as the most promising method to detect inspiral signals of LIGO sources and act as a forewarning to ground-based detectors. A LISA-like detector is capable of detecting massive enough stellar mass and intermediate-mass black holes, yet is incapable of detecting certain populations of these sources as well as early neutron star inspirals. A deci-hertz detector fills this void and also dramatically increases the number of possible sources detectible. This talk will overview the science payoff of such deci-hertz detectors, like the recently proposed TianGO and previously proposed DECIGO. Included are improvements of tests of GR through weak-field constraints, dispersion tests, and ringdown consistency. Further possibilities are detection of gravitational wave memory, intermediate mass black hole detections, and early warning of neutron star mergers.

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