

Abstract Submitted
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Scalar Gravitational Waves EMIL MOTTOLA, Los Alamos National Laboratory — General Relativity receives quantum corrections relevant at macroscopic distance scales and near event horizons. These arise from the conformal scalar degree of freedom in the extended effective field theory (EFT) of gravity generated by the trace anomaly of massless quantum fields in curved space. Linearized around flat space this quantum scalar degree of freedom combines with the conformal part of the metric and predicts the existence of scalar spin-0 "breather" propagating gravitational waves in addition to the transverse tensor spin-2 waves of classical General Relativity. Estimates of the expected strength of scalar gravitational radiation from compact astrophysical sources are given.

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