

Abstract Submitted
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Scattering of force-free electrodynamic waves by spacetime curvature FAN ZHANG, SEAN MCWILLIAMS, West Virginia University — The electromagnetic fields E and B are vectors that couple to spacetime curvatures via Ricci identities, and so force-free electrodynamic waves will in general be scattered. However, Brennan, Gralla and Jacobson found a family of exact solutions that escape scattering. We analytically and numerically study these solutions and their alterations, in order to provide more details as to what features allow them to possess this property. We hope our results will be useful when searching for other solutions of this type. We also provide physical intuition for some commonly encountered theoretical constructs.

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