

Abstract Submitted
for the SES20 Meeting of
The American Physical Society

On-Demand Surface Electromagnetic Waves at Boundaries of Bianisotropic Materials¹ JACOB ADAMS, TONILYNN HOLTZ, MAXIM DURACH, Georgia Southern University, Statesboro, GA, 30458 — We extend the method of the inverse problem for finding the effective parameters of materials that propagate desired plane waves [Mulkey, Dillies, Durach, *Opt. Lett.*, 43, 1226 (2018)] to design boundaries of bianisotropic materials (BAM) which propagate desired surface electromagnetic waves (SEWs). We show that an arbitrary choice of 3 SEWs which includes 2 inhomogeneous waves in the BAM with arbitrary polarizations provides the effective medium parameters of the BAM-vacuum interface that supports these waves. We discuss how a selection of SEWs for this SEW inverse problem affects the entire spectrum of SEWs propagating at the BAM-vacuum boundary.

¹Funding by Georgia Southern University College of Undergraduate Research (COUR)

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Date submitted: 18 Oct 2020

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