68. Title: Frequency tunable terahertz metamaterials using broadside coupled split-ring resonators
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Abstract: We present frequency tunable metamaterial designs at terahertz (THz) frequencies using broadside coupled split-ring resonator (BC-SRR) arrays. Frequency tuning, arising from changes in near-field coupling, is obtained by in-plane displacement of the two SRR layers. For electrical excitation, the resonance frequency continuously redshifts as a function of displacement. The maximum frequency shift occurs for vertical displacement of half a unit cell, resulting in a shift of 663 GHz (51% of f(0)). We discuss the difference in the BC-SRR response for electrical excitation in comparison to magnetic excitation in terms of hybridization arising from inductive and capacitive coupling.