485. Title:Equal-potential interpretation of electrically induced resonances in metamaterials
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Abstract:We propose a general description of electrically induced resonances (EIR) in

metamaterials (MMs) comprising subwavelength unit cells. Based on classical electrodynamics, we found that EIR is governed by an equal-potential effect. Our theory accounts for the EIR phenomena and can give a renewed definition of the effective electric field and hence effective permittivity for MMs made of either dielectrics or metals as well as combinations thereof. The EIR, inherent to the periodic structures, may be the unifying origin of recently observed anomalous electromagnetic phenomena, e.g. the enhanced transmission, the suppressed transmission and the enhanced absorption by a variety of metal film structures in the terahertz range.