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Meta-Optics with Nanowire Grid Arrays: Hyperbolic Fabry-Perot Modes and Hyperbolic Tamm Plasmons MAXIM DURACH, DAVID KEENE, MATTHEW LEPAIN, Georgia Southern Univ — In this talk we introduce a new class of structures – cavities formed by metal-dielectric metasurfaces. These cavities support a zoo of various resonances, including hyperbolic Tamm plasmons and hyperbolic Fabry-Perot modes, which feature anisotropic clover-leaf dispersion parallel to the metasurface and strong coupling between TM and TE polarizations in the modes. The properties and spectrum of the modes are highly tunable by the dimensional and material parameters of the structure and can be used for directional emission, modification of radiation produced by electric dipole emitters into magnetic dipole radiation as well as 90 degree polarization rotators and polarization rotation mirrors.

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