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# Resonant properties of a dielectric cylinder in the field of a plane electromagnetic wave in the microwave range

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***The resonance scattering spectra of the main lower modes of a dielectric cylinder excited by a linearly polarized electromagnetic wave of the GHz frequency range have been studied experimentally and by computer modeling. Resonances of magnetic and electric dipole and quadrupole are observed in the obtained spectra in the GHz frequency range. The vortex displacement current in the dielectric leads to the appearance of a magnetic dipole and the appearance of negative magnetic susceptibility in the region of the main resonance. The results of the experiment and numerical simulation coincide well.***

*Keywords*: dielectric cylinder, metamaterials, dielectric magnetic dipole, negative magnetic response, plane electromagnetic wave, resonance.

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