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Title: Geometric resonances in far-infrared reflectance spectra of PbTiO(3) ceramics

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Abstract: The complex dielectric permittivity of PbTiO(3) ceramics in the THz frequency range has been investigated theoretically and by a far-infrared reflectance technique. Besides the well-known polar modes of bulk PbTiO(3), the experiment reveals several additional modes identified as geometrical resonances (i.e., extraneous hybrid excitations created by inhomogeneous depolarization fields). A comparison of the experiment and model calculations suggests that the strong geometrical modes located near 300 and 500 cm(-1) are associated with the presence of 90 degrees ferroelectric walls.