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**Metamaterial features for a pure dielectric fiber<sup>1</sup>** ADRIAN REYES CERVANTES, CARLOS MENDOZA, Universidad Nacional Autónoma de México — We consider a solid cylindrical dielectric waveguide with an extremely thin coaxial cylindrical shell of higher refraction index inserted on it. We calculate the propagation parameters and the band structure of this fiber as function of the contrast index, and show that there exist propagating modes whose transverse distribution of amplitudes are both oscillating and evanescent. The oscillating modes exhibit the usual dispersion relation of a standard wave guide, whereas the evanescent modes gives rise to regions for which the group velocity almost vanishes and with propagation direction opposed to the Poynting vector, as seen in metamaterials.

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