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Photon-like plasmon polariton in a nanocoaxial waveguide[1] YUN PENG, XIWEN WANG, KRZYSZTOF KEMPA, Boston College — We study propagation of electromagnetic waves in a nano-coaxial waveguide for frequencies below the surface plasmon frequency. We show, that for sufficently low frequencies, the waveguide supports a plasmon polariton mode that resembles, and indeed reduces to the conventional TEM mode of the conventional coax, known in the radiotechnology. We consider also coupling of this mode to the external radiation, and show that it can be made very efficient with appropriate antenna-like arrangements.

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Krzysztof Kempa
Boston College

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