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标题: Coupling and Propagation of Sommerfeld Waves at 100 and 300 GHz

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摘要: The coupling between a linearly-polarized gaussian beam and a Sommerfeld wave propagating on a circular metallic wire is obtained owing to a differential phase element inserted in front of the metal wire. At millimeter-wavelengths we calculate a theoretical maximum coupling efficiency of 32% for this system in spite of the metal nature and radius in the range of a few hundreds of microns. A detailed experimental study of 100 and 300 GHz Sommerfeld waves propagating on stainless steel and tungsten wires is reported. The measured field at any distance from the wire compares well with theoretical predictions.

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