Spatially-dispersive surface modes on interfaces of layered hyperbolic metamaterials

In this work we present the study of influence of spatial dispersion on the existence of surface modes on the interfaces with multilayered hyperbolic metamaterials (HMMs). To that end we employ operator effective medium approximation correcting the Maxwell Garnett approximation. We find out the strong effect of the layer order on the dispersion of surface waves and reveal the dispersion curves missing in the Maxwell Garnett approximation. It is also shown that due to spatial dispersion layered HMMs can sustain TE-polarized surfaces modes.

General information
State: Published
Organisations: Department of Photonics Engineering, Plasmonics and Metamaterials, Belarusian State University
Contributors: Popov, V., Novitsky, A.
Number of pages: 4
Publication date: 2017

Host publication information
Title of host publication: Proceedings of International Conference on Metamaterials and Nanophotonics (METANANO-2017)
Publisher: AIP Publishing LLC
Article number: 040040
(AIP Conference Proceedings; No. 1, Vol. 1874).
Keywords: Surface Waves
DOIs:
10.1063/1.4996113
Source: FindIt
Source-ID: 2390598254
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017