1099-78-341 **Ildar R Gabitov*** (`gabitov@math.arizona.edu`), Department of Mathematics, University of Arizona, 617 N Santa Rita, Tucson, AZ 85721, **Andrei Maimistov** (`maimistov@pico.mephi.ru`), Department of Solid State Physics, Moscow Engineering Physics Institute, Kashirskoe sh. 31, Moscow, and **Zaxylyk Kudyshev** (`z.kudyshev@gmail.com`), Department of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY 14260. *Parametric process in index graded metamaterials.* Preliminary report.

We considered electromagnetic wave interaction with the graded index nonlinear meta-material, when index of refraction changes sign. Incident field generates surface waves propagating along zero-index interface. Propagation directions of these fields are opposite at the different sides of the interface. Electromagnetic field exhibits strong enhancement at the interface which leads to nonlinear interactions even if incident field is of moderate amplitude. We analyzed parametric wave interaction in case of quadratic nonlinearity. (Received February 11, 2014)