

**New Mathematical Model of an Infinite Cavity Chain**, M.I. AYZATSKY, National Science Center, Kharkov Institute of Physics & Technology (KFTI) - On the base of the proposed approach for studies on electromagnetic coupling of two cavities we have developed new mathematical model of an infinite cavity chain. The problem of many cavity interaction was transformed into the infinite set of linear equations that describe the interaction of tangential electric fields on the cavities interfaces. New form of dispersion equation and some numerical results are presented.