

179. Title: Nonlinear Dynamics of Free Electron Terahertz Lasers with Bragg Mirrors Based on Coupling of Traveling and Quasi-Critical Waves

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Abstract: Combination of various modifications of Bragg structures makes it possible to control electromagnetic fluxes in the interaction space, thus ensuring spatial coherence of radiation for high superdimensionality in two transverse coordinates required, which is for the operation of free electron lasers with distributed feedback in the submillimeter range. We propose that coupling between traveling and quasi-critical waves in the input Bragg mirror be used for mode selection in the "narrow" transverse coordinate directed along the normal to the conductors forming a planar waveguide. A traditional Bragg structure coupling copropagating and counterpropagating wave flows can be used as the output mirror.