Anisotropic turbulence of a dipolar exciton Bose-Einstein condensate in coupled quantum wells GEORGE TISHINSKI, OLEG BERMAN, GERMAN KOLMAKOV, New York City College of Technology, City University of New York — We report formation of turbulence in a non-equilibrium Bose-Einstein condensate (BEC) of dipolar excitons trapped in a confining parabolic potential. This turbulent state is characterized by strong non-equilibrium oscillations of the occupation numbers for the excitons states in the presence of the energy source and exciton decay. By considering the potentials where a spring constant in one direction differs from that in another direction, we study a transition from isotropic two-dimensional turbulence to anisotropic turbulence and then, to quasi-one dimensional turbulence. We discuss application of the theory of wave turbulence to the description of turbulent states in an exciton BEC.

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