

EXCITON CONDENSATION IN QUANTUM WELLS.
SELF-ORGANIZATION AGAINST
BOSE-CONDENSATION

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S u m m a r y

The analysis of interpretations of the experimental data on the emission spectra of excitons in double quantum wells is carried out. Features of both the spatial distribution of the emission and its behavior depending on the temperature and the pumping intensity are explained by the appearance of the condensed phase of excitons caused by their interaction. The explanation does not involve the Bose–Einstein condensation of excitons. The spatial distribution of the exciton density in the condensed phase depends on the exciton lifetime and is a consequence of self-organization processes in the non-equilibrium system. The distribution of excitons over trapped and free states and its influence on the emission spectra are investigated. The hydrodynamic equations for interacting excitons are obtained. The existence of soliton-like states (autosolitons) outside of the spinodal decomposition region is shown.