MAGNETIC DEPENDENCE OF THE ENERGY SPECTRUM AND INTENSITY OF EXCITON TRANSITIONS IN SEMIMAGNETIC SEMICONDUCTORS WITH DOUBLE QUANTUM WELLS

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The states and wave functions of an exciton in double quantum wells in a semimagnetic semiconductor are studied using a variational method. Four lowest energy levels are investigated. Two of these levels correspond to an electron and a hole located in one well (internal exciton), and two others correspond to the state with an electron and a hole separated in different layers (external exciton). When the distance between wells is small, a significant mixing of the levels of external and internal excitons exists. The dependences of the exciton spectrum of the system and the intensity of exciton transitions on both the width of a barrier between wells and external magnetic field are calculated in double quantum wells of the semiconductor $CdTe/Cd_{1-x}Mn_xTe$. It is shown that the force of oscillations of excitons with separate carriers quickly decreases when the distance between wells and a magnetic field increase. With increasing the magnetic field, this value may decrease by several times.