

## **Dynamic properties of quasi-one-dimensional structures with hydrogen bonds**

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The dynamical conductivity of the quasi-one-dimensional structures with hydrogen bonds is studied on the basis of proposed pseudospin-electron model. It is taken into account the proton-electron interaction, external longitudinal field, the tunneling hopping of protons, electron transfer and direct interaction between protons. The proton subsystem is described by the pseudospin formalism.

The dependence of the electron concentration and mean number of protons on site on temperature and external field are obtained. It was shown that abrupt changes of these characteristics at the first-order phase transition is smaller for the structures with a high proton tunneling frequency and stronger direct interaction between protons. The phase transition lines from uniform phase into charge ordered phase is determined. The dependence of the dynamical conductivity on temperature and external field and its changes at the phase transitions are obtained.