

DISCRETE TOPOLOGICAL SOLITONS
IN HYDROGEN-BONDED CHAINS

V.M. Karpan

Bogolyubov Institute for Theoretical Physics,
Nat. Acad. Sci. of Ukraine
(14b, Metrolohichna Str., Kyiv 03143, Ukraine)

S u m m a r y

The aim of this paper is to study the stationary properties and the dynamics of kinks in the frame of the soliton model which was proposed to explain some features of the proton transport in hydrogen-bonded chains. New types of stationary solutions with different symmetries have been found, and the calculations of the bifurcation scenarios of these solutions are performed. In a one-component model, discrete moving kink solutions with permanent profile are shown to exist. It is found that the mobility of a one-component kink is significantly higher than that of a two-component one.