



Nonlinear Phenomena at Phase Transitions and Instabilities

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Book Condition: New. Publisher/Verlag: Springer, Berlin | This NATO Advanced Study Institute, held in Geilo between March 29th and April 9th 1981, was the sixth in a series devoted to the subject of phase transitions and instabilities. The present institute was intended to provide a forum for discussion of the importance of nonlinear phenomena associated with instabilities in systems as seemingly disparate as ferroelectrics and rotating buckets of oil. Ten years ago, at the first Geilo school, the report of a central peak in the fluctuation spectrum of SrTiO close to its 3 106 K structural phase transition demonstrated that the simple soft-mode theory of such transitions was incomplete. The missing ingredient was the essential nonlinearity of the system. Participants at this year's Geilo school heard assessments of a decade of experimental and theoretical effort which has been expended to elucidate the nature of this nonlinearity. The importance of ordered clusters and the walls which bound them was stressed in this context. A specific type of wall, the soliton, was discussed by a number of speakers. New experimental results which purport to demonstrate the existence of solitons in a one-dimensional ferromagnet were presented. A detailed discussion was...



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