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Phonon soft modes and para- to ferro-electric phase transitions. (English) Zbl 07459819
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Summary: In this special issue of Physica A in memory of Professor Dietrich Stauffer, I first recall my impression on him while being his postdoc for a year at HLRZ. In the following scientific part, I discuss the theory of soft phonons with quartic nonlinear interactions. This is applied to the cubic crystal BaTiO$_3$ for phase transition from para- to ferro-electric phase.

MSC:
82-XX Statistical mechanics, structure of matter

Keywords:
effective phonon; soft mode; BaTiO$_3$

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