

Abstract Submitted
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Phase diagram of the itinerant helical magnet MnSi at high pressures and strong magnetic fields SERGEI STISHOV, Russian Acad of Sci-Troitsk — We performed a series of resistivity, heat capacity and ultrasound speed measurements of a MnSi single crystal at high pressures and strong magnetic fields [1-3]. Two notable features of the phase transition in MnSi that disappear on pressure increase are a sharp peak marking the first order phase transition and a shallow maximum, situated slightly above the critical temperature and pointing to the domain of prominent helical fluctuations. The longitudinal and transverse ultrasound speeds and attenuation were measured in a MnSi single crystal in the temperature range of 2-40 K and magnetic fields to 7 Tesla. The magnetic phase transition in MnSi in zero magnetic field is signified by a quasi-discontinuity in the c_{11} elastic constant, which almost vanishes at the skyrmion - paramagnetic transition at high magnetic fields. The powerful fluctuations at the minima of c_{11} make the mentioned crossing point of the minima and the phase transition lines similar to a critical end point, where a second order phase transition meets a first order one.

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