

Abstract Submitted
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Comparative study of helimagnets MnSi and Cu₂OSeO₃ at high pressures¹ SERGEI STISHOV, VLADIMIR SIDOROV, ALLA PETROVA, Institute for High Pressure Physics of Russian Academy of Sciences, Troitsk, Russia, PETER BERDONOSOV, VALERY DOLGIKH, Department of Chemistry, Moscow State University, Moscow, Russia — The heat capacity of helical magnets Cu₂OSeO₃ and MnSi has been investigated at high pressures by the ac-calorimetric technique. Despite the differing nature of their magnetic moments, Cu₂OSeO₃ and MnSi demonstrate a surprising similarity in behavior of their magnetic and thermodynamic properties at the phase transition. Two characteristic features of the heat capacity at the phase transitions of both substances (peak and shoulder) behave also in a similar way at high pressures if analyzed as a function of temperature. This probably implies that the longitudinal spin fluctuations typical of weak itinerant magnets like MnSi contribute little to the phase transition. The shoulders of the heat capacity curves shrink with decreasing temperature suggesting that they arise from classical fluctuations. In case of MnSi the sharp peak and shoulder at the heat capacity disappear simultaneously probably signifying the existence of a tricritical point and confirming the fluctuation nature of the first order phase transition in MnSi as well as in Cu₂OSeO₃.

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