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Quantum degradation of the second order phase transitions SERGEI STISHOV, ALLA PETROVA, Institute for High Pressure Physics of RAS, Troitsk, Russia, SERGEY GAVRILKIN, P. N. Lebedev Physical Institute of RAS, Leninsky pr., 53, 119991 Moscow, Russia, LUBOV KLINKOVA, Institute of Solid State Physics of RAS, Chernogolovka, Moscow District, Russia — The specific heat, magnetization and thermal expansion of single crystals of antiferromagnetic insulator EuTe were measured at temperatures down to 2 K and in magnetic fields up to 90 kOe. The Neel temperature, being ~ 9.8 K at H=0, decreases with magnetic field and tends to zero at ~ 76 kOe, therefore forming the quantum critical point. The heat capacity and thermal expansion coefficient reveal  $\lambda$ -type anomalies at the second order magnetic phase transition at low magnetic fields, evolving to simple jumps at high magnetic fields and low temperatures, well described in a fluctuation free mean - field theory. The experimental data and the corresponding analysis favor the quantum concept of effective increasing space dimensionality at low temperatures that suppresses a fluctuation divergence at a second order phase transition.

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