MAGNETIC STRUCTURE OF THE RARE-EARTH DIPOLE MAGNET $CsDy(MoO_4)_2$

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The energy of the magnetoordered state for rare-earth subsystem of $CsDy(MoO_4)_2$ is calculated in the pure magnetic dipole-dipole approximation when the exchange spin-spin interactions are neglected. This compound contains two non-equivalent magnetic ions in the unit cell. Magnetic configuration of rare-earth ions for ground state of the magnetoordered phase was determined by the Luttinger-Tisza and Nimeyer-Misra methods. The magnetic moment dependences from external magnetic field for main orientations at zero temperature are calculated. Phase transitions which are caused by the external field are analysed too. The calculated equivalent G-factors values are in satisfactory accordance with those obtained from experimental investigations of the magnetic properties of this compound.

9.7 cm

13.4 cm

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