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Magnetic ordering in $EuNiO_3$ and $NdNiO_3$ JOCHEN LITTERST, TU Braunschweig, Germany, ELISA BAGGIO-SAITOVITCH, ALEXANDER CAYTUERO, CBPF, Rio de Janeiro, Brazil, MOHSEN ABDELMEGUID, HANS MICKLITZ, University of Cologne, Germany, J.A. ALONSO, CSIC, Madrid, Spain — We report Mössbauer and magnetization studies on ^{57}Fe:$EuNiO_3$ and ^{57}Fe:$NdNiO_3$ between 1.5 K and 300 K. Below $T_N \approx$ 190 K and 132 K for the Eu and the Nd compound, resp., the Mössbauer spectra reveal two magnetically inequivalent Ni (Fe) sites. Roughly 50% of the spectral area split into a sextet (A) with a well defined magnetic hyperfine field. The spectra A are due to the antiferromagnetically ordered Ni sublattices. The other 50% of the spectral area remain unsplit and only gradually broaden on decreasing temperature (spectra B). The observation of two kinds of magnetically inequivalent Ni(Fe) sites is both compatible with charge ordering or orbital ordering leaving 50% of Ni sites frustrated. Spectrum B is typical for a slowing down magnetic fluctuations. A best approach is yielded by a model allowing for stochastic jumps of the hyperfine field in random directions. Both compounds yield nearly identical fluctuation rates with a roughly linear temperature dependence indicating that the influence of the magnetic moment of the rare earth on Ni is negligible.

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