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Neutron Scattering studies of Yb₁₄MnSb₁₁

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The tetragonal ($a=b=16.6 \text{ \AA}$, $c=21.95 \text{ \AA}$) material Yb₁₄MnSb₁₁ is a ferromagnetic semiconductor where the only magnetic ion is Mn present at the level 3.8 atomic percent. With a magnetic transition near 50 K, Yb₁₄MnSb₁₁ is a promising compound for investigating the physics of carrier mediated ferromagnetism in dilute magnetic semiconductors without the possible complications of clustering or impurity phases. We report here on some preliminary results of our neutron scattering investigations of magnetism in single crystals of Yb₁₄MnSb₁₁.