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Anisotropic spin fluctuations in superconducting pnictide $\mathbf{BaFe_{1.9}Ni_{0.1}As_2}$ OLIVER LIPSCOMBE, CHENGLIN ZHANG, LELAND HARRIGER, University of Tennessee, PAUL FREEMAN, ILL, France, PENGCHENG DAI, University of Tennessee — Spin excitations in optimally doped superconducting $BaFe_{2-x}Ni_xAs_2$ ($x = 0.1$) were investigated with polarized neutron scattering. In previous (unpolarized) neutron scattering experiments a resonance and spin gap had been observed, but using polarization analysis we have been able to show that the response observed is of purely magnetic origin. Furthermore, we have found anisotropy in the magnetic response, showing different behavior between spin fluctuations with differing magnetic moment direction. This is an unexpected find, as this composition is not magnetic ordered.

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