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Polarized Neutron Scattering Study of Over-doped $\mathbf{BaFe_{2-x}Ni_xAs_2}$ MENGSHU LIU, University of Tennessee, CHRIS LESTER, University of Bristol, JIRI KULDA, ILL, France, XINGYE LU, HUIQIAN LUO, Institute of Physics, Beijing, STEPHEN HAYDEN, University of Bristol, PENGCHENG DAI, University of Tennessee — Spin excitations in over-doped superconducting $BaFe_{2-x}Ni_xAs_2$ (x=0.15) were investigated using polarized neutron scattering. In a previous experiment on the optimally (x=0.1) doped sample, polarization analysis reveals that the magnetic response is highly anisotropic, at energies as high as 10 meV. Since this optimally doped sample is close to the boundary where antiferromagnetism disappears, there are still relatively strong antiferromagnetic correlations presented in the normal state. We will report our results on the over-doped sample, where the correlation is considerably weakened but still superconducting.

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