

Abstract Submitted
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High Energy Spin Excitations in Optimal doped Superconducting $\text{BaFe}_{1.9}\text{Ni}_{0.1}\text{As}_2$ MENGSHU LIU, Department of Physics and Astronomy, The University of Tennessee, Knoxville, Tennessee 37996-1200, USA, HUIQIAN LUO, Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China, RUSSELL EWINGS, TATIANA GUIDI, ISIS Facility, Rutherford Appleton Laboratory, STFC, Chilton, Didcot, Oxon, OX11 0QX, United Kingdom, PENGCHENG DAI, Department of Physics and Astronomy, The University of Tennessee, Knoxville, Tennessee 37996-1200, USA — The recent discovered iron pnictide superconductor which shows a transition temperature up to 50K has drawn much attention in the community. There are indications that superconductivity in the iron arsenides family may be driven by a magnetic pairing mechanism, the nature of which remains poorly understood. In our recent inelastic neutron scattering experiment on optimal doped $\text{BaFe}_{1.9}\text{Ni}_{0.1}\text{As}_2$ sample, spin excitation data are collected throughout the Brillouin zone and up to energy transfer of 400meV which was not probed before. We found that the scattering persists as high as 300 meV in the superconducting sample, and a spectra transfer similar to the parent compound with a spin nematicity was also observed

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