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Spin Excitations in $\text{La}_{1.75}\text{Sr}_{0.25}\text{Zn}_{0.01}\text{Cu}_{0.99}\text{O}_4$ ¹ STEPHEN WILSON, Lawrence Berkeley National Lab, B. K. FREELON, University of California, Berkeley, Z. YAMANI, CNBC Canda, W. BUYERS, CNBC Canada, C. ROTUNDU, Lawrence Berkeley National Lab, S. WAKIMOTO, ROBERT BIRGENEAU, University of California, Berkeley/ Lawrence Berkeley National Lab — Recently, reports of a dramatic enhancement in the dynamic, incommensurate, spin density wave response in overdoped $\text{La}_{2-x}\text{Sr}_x\text{Cu}_{1-y}\text{Zn}_y\text{O}_4$ [PRB **72**, 064521 (2005)] have provided considerable insight toward the microscopic understanding of Zn-induced magnetic states and their interaction with the superconducting phase. As a continuation of these studies, in this talk we will present our recent inelastic neutron scattering studies of spin excitations within the Zn-doped cuprate, $\text{La}_{1.75}\text{Sr}_{0.25}\text{Zn}_{0.01}\text{Cu}_{0.99}\text{O}_4$ (LSCZO $x=0.25$, $y=0.01$). The dispersion of the spin density wave excitations throughout the Brillouin zone will be presented along with the local spin susceptibility from $\Delta E=0-45\text{meV}$. Particular focus will be given to the modifications in the magnetic behavior induced via Zn-substitution in this overdoped LSCZO system.

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