

Abstract Submitted  
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**Magnetic ground state and excitation of SrV<sub>10</sub>O<sub>15</sub>** JOOSEOP LEE, KAZUKI IIDA, University of Virginia, MATTHEW STONE, SNS, ORNL, MASA AKI MATSUDA, HFIR, ORNL, TOMOMASA KAZITA, TAKURO KATSUFUJI, Waseda University, SEUNGHUN LEE, University of Virginia, UNIVERSITY OF VIRGINIA TEAM, WASEDA UNIVERSITY COLLABORATION, SNS, OAK RIDGE NATIONAL LABORATORY COLLABORATION, HFIR, OAK RIDGE NATIONAL LABORATORY COLLABORATION — SrV<sub>10</sub>O<sub>15</sub> has magnetic bilayers composed of triangular lattices with periodical missing, which can be an interesting playground for the study of frustration. In this new type of magnetic structure, using neutron powder diffraction, we find a magnetic ground state below 45K with ordering vector  $Q=(0 \ 1/2 \ 1)$ , and study detailed spin configuration. Magnetic excitations have also been investigated using a single crystal at ARCS, a time-of-flight neutron chopper spectrometer at SNS. Our results show quite interesting highly dispersive dispersion relations: a gapless Goldstone mode is strongly dispersive along the a and c axis, and is less-strongly dispersive along the b axis. Another mode is dispersionless along the a and b axis, and is strongly dispersive along the c axis. We determine the spin hamiltonian that sheds light in understanding the interplay between orbital, spin, charge, and lattice degrees of freedom in this compound.

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