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Neutron scattering studies on Kagome bilayers – Spin fluctuations in a broad dynamic range H. MUTKA, Institut Laue Langevin, Grenoble, France, C. PAYEN, Institut des Materiaux Jean Rouxel, Nantes, France, G. EHLERS, J.R. STEWART, Institut Laue Langevin, Grenoble, France, A. MELLERGARD, Studsvik Neutron Research Laboratory, Nyköping, Sweden — The kagome bilayer compounds Ba2Sn2ZnCr7xGa10-7xO22 and SrCr9xGa12-9xO19 are localized spin (S=3/2) systems with strong antiferromagnetic exchange ($J/k \approx 50$ K) that show no long-range order down to mK temperatures. This remarkable behaviour originates from the geometrical frustration. We have examined these systems using polarized neutron diffraction, inelastic neutron scattering (INS) and neutron spin-echo (NSE) spectroscopy for characterizing the magnetic correlations in a very broad energy range. INS data reveals the dynamic nature of the broad diffuse scattering that characterises the quasi-elastic magnetic response above the spin freezing. New aspects on the freezing phenomenon and the ground state properties are revealed using NSE.

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