Spin and Singlet Dynamics of the $S=1/2$ Quantum Kagome Antiferromagnet  
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CLAIRE LHUILLIER, LPTMC, UPMC Paris, France — The kagome Heisenberg antiferromagnet with spin 1/2 has been the topic of many theoretical investigations. Most of these focused on groundstate properties or were aiming at an explanation of the anomalous high density of singlet excitations. In this contribution we report on exact diagonalization studies concentrating on dynamical correlation functions. First the full dynamical spin structure factor $S(q, \omega)$ on 36 sites has been obtained, showing a broad, rather incoherent spectral response, which furthermore seems to increase significantly at low energies. Then we discuss the time dependent spin autocorrelation function as well as dynamical dimer-dimer correlation functions. All these results combined point towards a highly fluctuating system, both in the singlet and the triplet channel. We conclude by a comparison with recent inelastic neutron scattering measurements on the Herbertsmithite and Volborthite compounds.