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**Dynamical Structure Factors of quasi-one-dimensional antiferromagnets** ROB HAGEMANS, JEAN-SÉBASTIEN CAUX, University of Amsterdam, JEAN MICHEL MAILLET, ENS Lyon — For a long time it has been impossible to accurately calculate the dynamical structure factors (spin-spin correlators as a function of momentum and energy) of quasi-one-dimensional antiferromagnets. For integrable Heisenberg chains, the recently developed ABACUS method (a first-principles computational approach based on the Bethe Ansatz) now yields highly accurate (over 99% of the sum rule) results for the DSF for finite chains, allowing for a very precise description of neutron-scattering data over the full momentum and energy range. We show remarkable agreement between results obtained with ABACUS and experiment.

Rob Hagemans  
University of Amsterdam

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