Magnetic Spin Excitations in Diluted Ferromagnetic Systems

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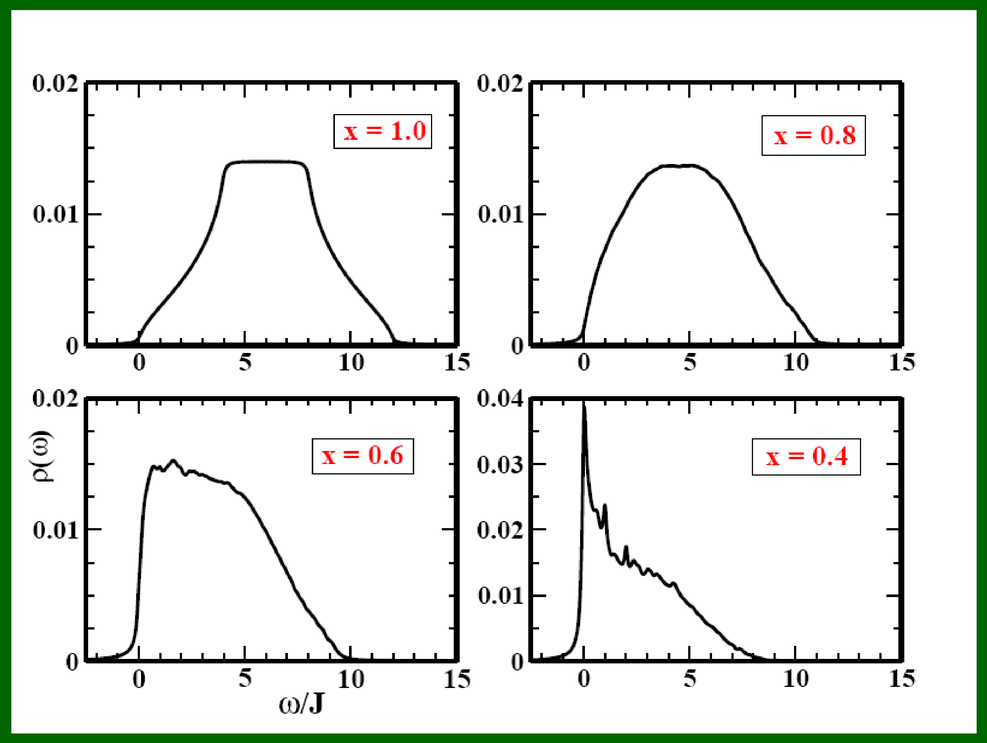
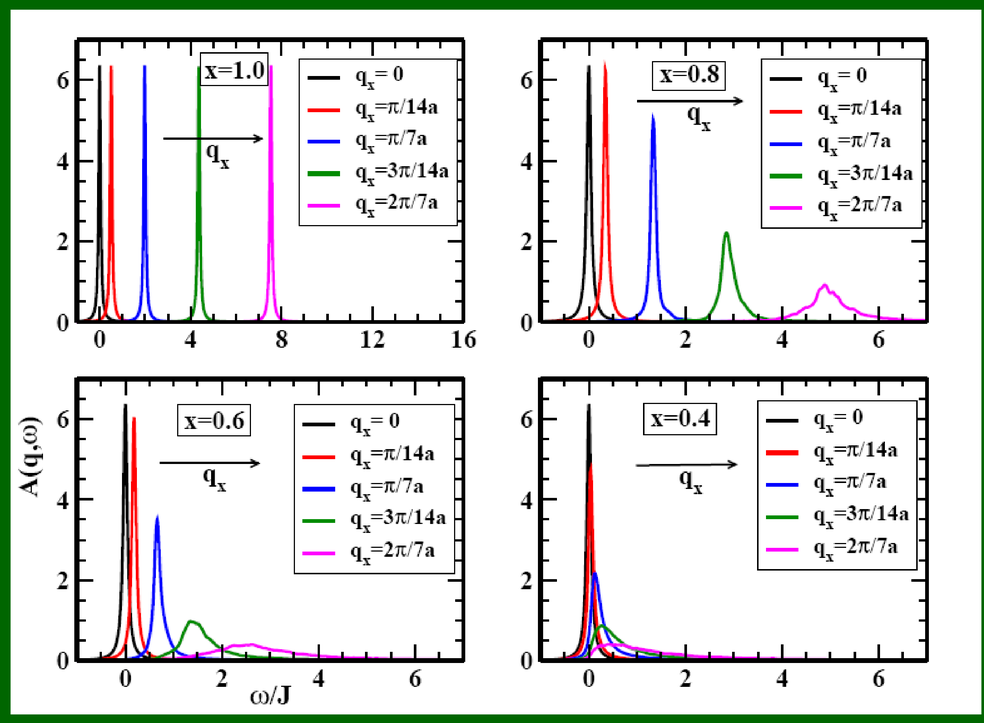
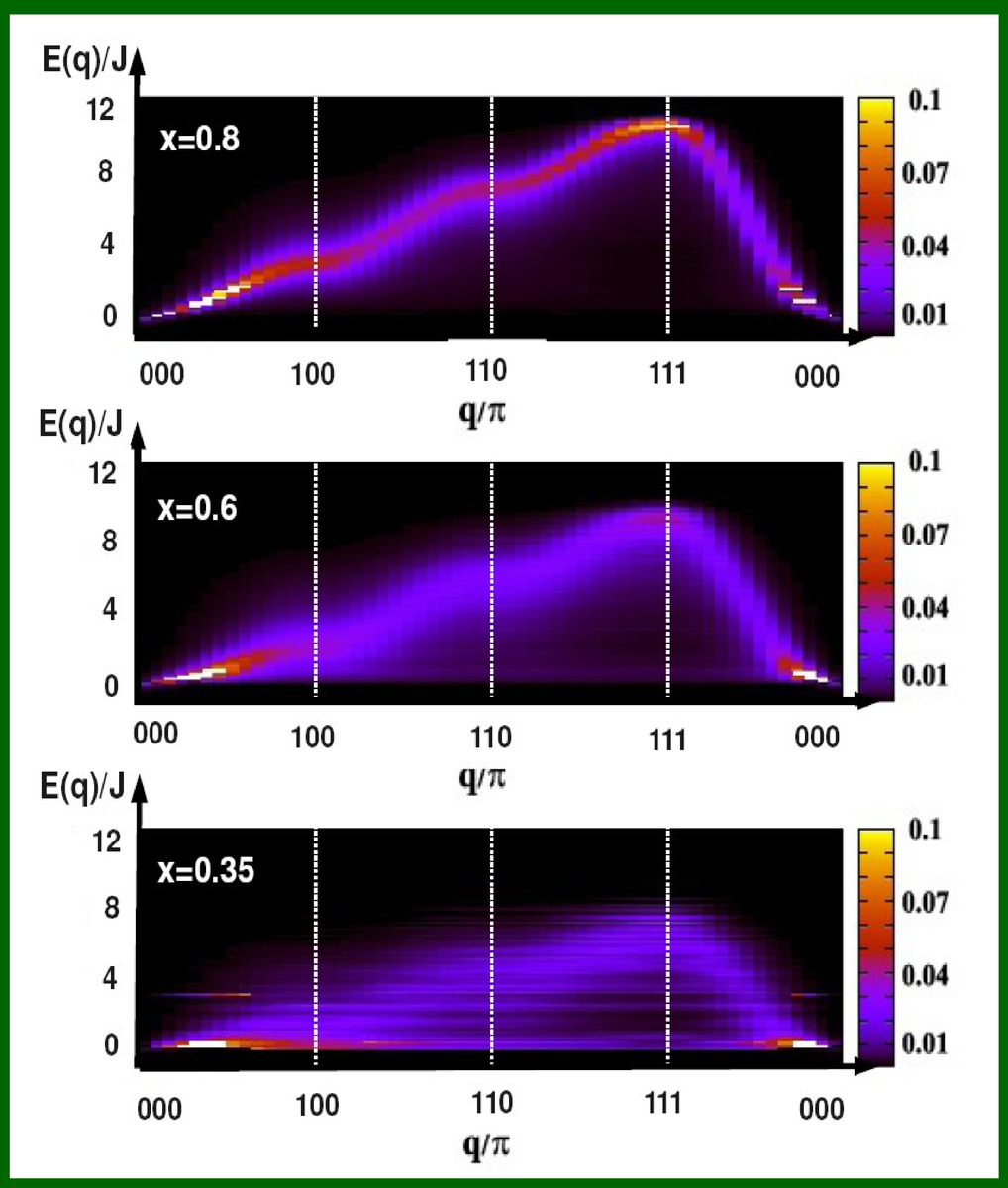


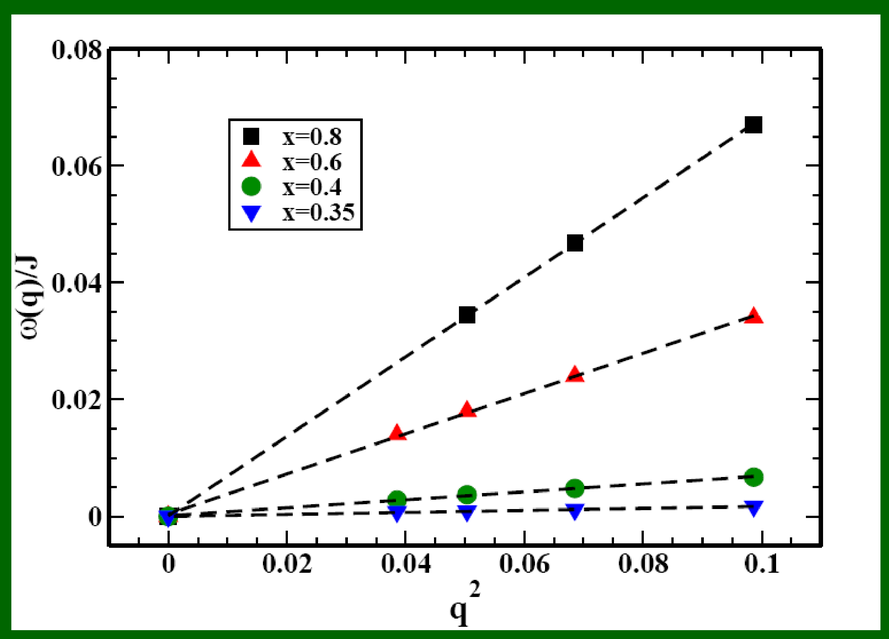
Magnon density of states ρ(ω) as a function of the energy ω for different concentration of magnetic impurities x. The energy axis is in ω/J.



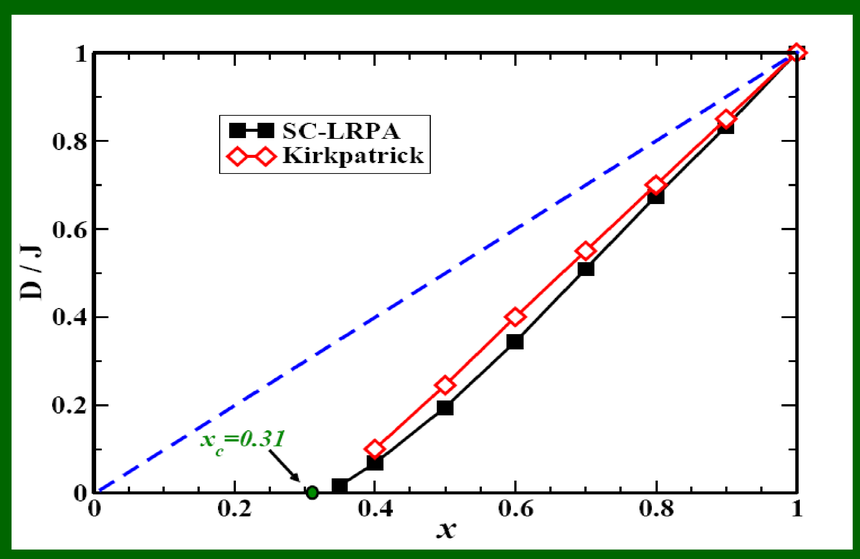
Spectral function A(q, ω) as a function of the energy ω in the (100) direction for different values of q_x, with varying concentration of magnetic impurities (x). The energy axis is in ω/J



Spectral function A(q, ω) in the (q, ω) plane for different concentration of magnetic impurities (x). (The size of the simple cubic lattice is L=32).



Magnon energy ω(q) (in ω/J) as a function of q² for different concentration of magnetic impurities (x). The size of the simple cubic lattice varies from L=20, 24, 28 and 32.



Spin stiffness D (in D/J) as a function of the concentration of the magnetic impurities (x). The diamonds represent the data from Kirkpatrick*. The squares are calculated within SC-LRPA. The dashed line is the Virtual Crystal Approximation value. (x_c is the percolation threshold).

*S. Kirkpatrick, Solid State Commun. 12, 1279 (1973).