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Double dispersion of the magnetic resonant mode in cuprates

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The magnetic excitation spectra in the vicinity of the resonant peak, as observed by inelastic neutron scattering in cuprates, are studied within the memory-function approach. It is shown that at intermediate doping the superconducting gap induces a double dispersion of the peak, with an anisotropy rotated between the downward and upward branch. Similar behavior, but with a spin-wave dispersion at higher energies, is obtained for the low-doping case assuming a large pairing pseudogap.

References

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