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Dispersing and non-dispersing peaks and two-energy scales in AC-Arpes in underdoped cuprates[1] BELEN VALENZUELA, ELENA BASCONES, Instituto de Ciencia de Materiales de Madrid — Recent experiments have shown that the structure in Autocorrelation (AC) Arpes maps compare well with the one observed in Fourier Transform Scanning Tunneling Spectroscopy (FT-STS). In particular dispersing peaks (consistent with the octet model due to scattering induced interference) are observed at low energies in the superconducting state and non-dipersing ones are seen in the pseudogap state and at higher energies in the superconducting state of underdoped cuprates. We have computed the AC-Arpes using the Yang, Rice and Zhang (YRZ) model for the pseudogap. This model assumes that pseudogap and superconductivity compete below a critical doping and has been succesfully used (cond-mat/0611154) to explain the two energy scales found in Raman and ARPES experiments below Tc. We will show that the computed AC-ARPES compares well with the experimental results. The pseudogap is characterized by non-dispersing peaks. In underdoped superconducting cuprates with pseudogap scale larger than the superconducting order parameter, dispersing peaks, associated to the superconducting order parameter appear at low energies and non-dispersing ones, related to the pseudogap, at higher energies.

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Belen Valenzuela
Instituto de Ciencia de Materiales de Madrid

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