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Electron itinerancy and Strong Itinerant Spin Fluctuations in the Normal State of $CeFeAsO_{0.89}F_{0.11}$ Iron-Oxypnictides F. BONDINO, E. MAGNANO, M. MALVESTUTO, F. PARMIGIANI, M.A. MCGUIRE, A.S. SEFAT, B.C. SALES, R. JIN, D. MANDRUS, E.W. PLUMMER, D.J. SINGH, N. MANNELLA — The recent discovery of high-temperature superconductivity in iron-oxypnictides and related materials has generated enormous excitement in the community. The electronic structure of the normal state of $CeFeAsO_{0.89}F_{0.11}$ has been measured with photoemission spectroscopy (PES) and x-ray absorption spectroscopy (XAS). The Fe XAS and PES spectra do not display satellite features commonly found in the Cu spectra of cuprates HTCS, indicative of the absence of strong electron correlation and localization effects in the electronic structure. In sharp contrast to the cuprates HTSC, the Fe XAS and PES spectra exhibit spectral signatures which are typical of delocalized, itinerant electrons. The Fe 3*s* spectra show exchange multiplets due to the coupling of the final Fe 3*s* core hole state with the conduction band states, indicative of the presence of fluctuating spin moments on the Fe sites. These findings indicate that the FeSC must be considered a new class of materials, quite unlike the cuprate HTSC or conventional BCS superconductors [F. Bondino et al. http://arxiv.org/abs/0807.3781 (arXiv:0807.3781)].

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