Photoemission in 5f systems - duality and final state effects

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In recent years, the concept of 5f electron duality started to play important role in our understanding of the electronic structure of actinides. With respect to the photoemission spectra, duality may be seen through the existence of two distinct regions in the valence band. First region, usually in the form of one narrow peak, is located near the Fermi level and represents the itinerant part of the spectral function. Second region, comprising a broad peak of major spectral weight is located a few eV below the Fermi level and corresponds to the more localized part of 5f response. The role of 5f duality in establishing electronic structure will be discussed. Aspects of the relevant final-state effects will also be shown.

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