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**Spectral functions across the Metal-Insulator transition in the disordered 2D Hubbard model**<sup>1</sup> KARIM BOUADIM, NGANBA MEETEI, YEN LEE LOH, NANDINI TRIVEDI, Ohio State University — We study the metal-insulator transition in the repulsive disordered 2D Hubbard model [1,2] using Determinant Quantum Monte Carlo (DQMC). We calculate the spin-spin and current-current correlations to learn about the nature of the conducting and insulating phases. We also obtain local spin-dependent spectroscopic properties, using the maximum entropy method, to understand the role of disorder on the transition in this highly correlated fermion system. We discuss implications of our results for scanning tunneling spectroscopy and dynamical conductivity experiments [3].

[1]. P.J.H Denteneer, R.T. Scalettar and N. Trivedi, Phys. Rev. Lett.83, 4610 (1999).

[2]. D. Heidarian and N. Trivedi, Phys. Rev. Lett. 93, 126401 (2004).

[3]. M.M. Qazilbash et. al., Science 318, 1750 (2007).

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Karim Bouadim  
Ohio State University

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