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**Probability Density Function at the 3D Anderson Transition** ALBERTO RODRIGUEZ, LOUELLA J. VASQUEZ, RUDOLF ROEMER, Department of Physics and Centre for Scientific Computing, University of Warwick, Coventry CV47AL, United Kingdom — The probability density function (PDF) for the wavefunction amplitudes is studied at the metal-insulator transition of the 3D Anderson model, for very large systems up to  $L^3 = 240^3$ . The implications of the multifractal nature of the state upon the PDF are presented in detail. A formal expression between the PDF and the singularity spectrum  $f(\alpha)$  is given. The PDF can be easily used to carry out a numerical multifractal analysis and it appears as a valid alternative to the more usual approach based on the scaling law of the general inverse participation ratios.

Alberto Rodriguez  
Dept. of Physics and Centre for Scientific Computing,  
University of Warwick, Coventry CV47AL, United Kingdom

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