Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

**New Glassy Phases of Electrons in Disordered Potentials** ROGER HAYDOCK[1], University of Oregon, NIGEL GOLDENFELD, University of Illinois at Urbana-Champaign — Critical disorders are found analytically for the Anderson model of independent electrons in two and three-dimensional random potentials. At large disorders the states are exponentially localized, then with decreasing disorder the model goes through a sequence of less strongly localized phases ending with power-law localization just above the transition to extended states. These results follow from an analytic transformation of the Anderson model into augmented space where disorder is removed from matrix-elements by constructing a basis of extended states correlated with the potential. For different disorders, the states are dominated asymptotically by different sectors of augmented space, and these sectors are identified by path-counting.

[1]work supported by the Richmond F. Snyder Fund

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Date submitted: 23 Nov 2005 Electronic form version 1.4