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A new paradigm for heavy electron materials YI-FENG YANG, Institute of Physics, Chinese Academy of Sciences, DAVID PINES, University of California, Davis — Recent experiments on the emergence of heavy electrons that display universal behavior below a characteristic temperature T^* have shown that the well-known Doniach phase diagram does not apply to most materials. Here we introduce the concept of hybridization effectiveness as the organizing principle and show that it makes possible a consistent and quantitative description of the low temperature emergent behaviors of a number of heavy electron materials. We propose a new phase diagram and predict a delocalization line in the pressure/temperature phase diagram that is to be examined in future experiment.

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