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Percolative Effects on Noise in Pentacene Transistors[1] BRAD CONRAD, WILLIAM CULLEN, WINSTON YAN, ELLEN WILLIAMS, University of Maryland - College Park — Noise in pentacene thin film transistors has been measured as a function of device thickness from well above the effective conduction channel thickness to only two conducting layers. Over the entire thickness range, the spectral noise form is 1/f, and the noise parameter varies inversely with gate voltage, confirming that the noise is due to mobility fluctuations, even in the thinnest films. Hooge's parameter varies as an inverse power-law with conductivity for all film thicknesses. The magnitude and transport characteristics of the spectral noise are well explained in terms of percolative effects arising from the grain boundary structure. http://arxiv.org/abs/0710.2700v2

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