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Study of granular two-band superconducting films: existence of a zero-temperature metallic phase BOJUN YAN, TAI-KAI NG — A variational approach is used to study the zero-temperature phase transition of two-band granular superconducting films. For s+(-) superconductors with strong enough disorder, we show the plausible existence of a metallic phase between the superconducting and insulator phases which is absent in normal single band granular superconducting films. We propose that the metallic phase may be observed in granular films of pnictide superconductors. Novel possibilities such as charge 2e metal and "topological metal" are also discussed.

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