

Abstract Submitted
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Superfluid transition in granular ^4He : Coupling and proximity effects¹ JUSTIN PERRON, SUNY University at Buffalo, MARK KIMBALL, KEVIN MOONEY, FRANCIS GASPARINI, SUNY University at Buffalo — We report measurements of the specific heat and superfluid density of helium confined in an array of $(2\ \mu\text{m})^3$ boxes in equilibrium with a 31.7 nm film. We identify for the first time with these data proximity effects on the specific heat and superfluid density of the film. Comparison with other data allows us to deduce the excess specific heat associated with a collective behavior near the superfluid transition in an array of $(1\ \mu\text{m})^3$ boxes of helium connected through channels. Some of these effects are analogous to the behaviour of superconductors but have not been identified previously in the case of ^4He .

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