

Geerligs, Peters, and Mooij Reply: The clear distinction between mutual and self-capacitance that Ferrell and Mirhashem¹ make is significant for quantitative comparison of our experiments with theories of phase transitions. In our Letter² the transition at x around 1 was quoted³ as an approximate threshold. As such the distinction is less relevant since both choices of capacitance yield comparable results. In a mean-field approximation, e.g., Efetov finds for self-charging a critical x equal to 1.³ Doniach arrives, for mutual capacitance, at $x=2$.³ Recently, Eckern and Schön performed a mean-field treatment for arbitrary mutual and self-capacitance.⁴ They also find a critical x of order 1 for mutual capacitance much larger than self-capacitance.

We agree that for a more reliable check of theory with experiments smaller junctions would be helpful but of course their fabrication is nontrivial. Among other present uncertainties are the effect of additional elements in the capacitance matrix, and the question of the appropriate "tunneling horizon" for the determination of C_{eff} .⁵ This last item can make a difference of about a

factor of 3 in the experimental determination of the junction capacitance.

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¹R. A. Ferrell and B. Mirhashem, preceding Comment, Phys. Rev. Lett. **63**, 1753 (1989).

²L. J. Geerligs *et al.*, Phys. Rev. Lett. **63**, 326 (1989).

³Reference 10 of Ref. 2.

⁴U. Eckern and G. Schön, in *Festkörperprobleme/Advances in Solid State Physics*, edited by U. Rössler (Vieweg, Braunschweig, 1989), Vol. 29, p. 1.

⁵U. Geigenmüller and G. Schön, "Single Electron Effects in Arrays of Normal Tunnel Junctions," Delft University of Technology report, 1989 (to be published).