

Prof. Dorsey, Alan (University of Florida): Low temperature properties of solid ^4He : Supersolidity or quantum "metallurgy"?

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A "supersolid" is a putative phase of matter possessing the distinguishing property of a solid—a nonzero shear modulus—together with Bose condensation. Numerous experiments over the last six years have yielded hints of supersolid behavior in solid ^4He , but the threads of these investigations have not produced a consistent interpretation. I'll briefly review some of the history of the subject, the recent experimental and theoretical work, and conclude with an overview of my own work on phenomenological modeling of defects in solid ^4He .

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