

## EXCITON SUPERFLUID-TO- INSULATOR TRANSITION IN DOUBLE LAYER GRAPHENE

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Longstanding theory predicts that bosonic gases can undergo a phase transition to a quantum coherent crystalline state that exhibits, simultaneously, both the properties of a solid and a superfluid. Termed a supersolid, its prediction motivated several decades of research in condensed Helium but experimental evidence has remained limited. I will discuss our recent experimental observation of a superfluid-to-insulator transition in a system of bilayer excitons upon tuning to the dilute limit. We attempt to establish the nature of the insulating state by mapping the phase boundary under varying temperature and density, and discuss the possibility that it could represent a bosonic supersolid.

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