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Effect of ^{3}He impurity on the supersolid transition of ^{4}He[1] EUNSEONG KIM, MOSES H. W. CHAN, The Pennsylvania State University — The supersolid phase of ^{4}He was revealed by a series of torsional oscillator experiments.[1] One of the most intriguing features of the supersolid transition is the broadening of the transition and the enhancement of T_c by the addition of extremely small amount of ^{3}He impurity. This effect is very different from that in superfluid film and that in 'bulk' superfluid helium. We have investigated theinfluence of ^{3}He on the supersolid transition by systematically diluting isotopically-pure ^{4}He (^{3}He impurity less than 0.3ppb) with ^{3}He. [1] E. Kim and M. H. W. Chan, *Science* **305**, 1941 (2004); *Nature* **425**, 227 (2004); *J. Low Temp. Phys.* **138**, 859 (2005)

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