

Abstract Submitted  
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**Magnetic Susceptibility  $\chi$  of O<sub>2</sub> in Confined Geometries**<sup>1</sup> TIMOTHY PRISK, PAUL SOKOL, Indiana University Cyclotron Facility — Bulk solid oxygen exhibits three distinct crystallographic and paramagnetic phases,  $\alpha$ ,  $\beta$ ,  $\gamma$  (in order of ascending temperature). The thermodynamic behavior of some systems, including their possible phases and phase transition temperatures, are known to change in interesting and nontrivial ways when these systems are subjected to confined geometries. Recent work by Kilburn and Sokol on the phonon density of states for confined solid oxygen indicates that the first of these crystallographic phases,  $\alpha$ , is completely suppressed. The magnetic susceptibility  $\chi$  of solid oxygen confined within various porous materials will be presented. The effect of confinement on the magnitude of the susceptibility  $\chi$  and the transition temperatures will be discussed.

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