

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Paramagnetic effect in nano-opal-lead structure** FULIN ZUO, HENGSHENG ZHANG, University of Miami, DI WU, JING SHI, University of California — We report magnetic studies of the paramagnetic effect observed in the superconducting nano-structured opal-lead system. Positive magnetization is clearly observed when the sample is cooled in field. The paramagnetic effect is strongly dependent on the applied field, cooling rate and the background magnetization. The results suggest that the paramagnetic moment is due to flux trapping and the competition between the positive and negative moments due to the temperature dependence of penetration depth.

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Date submitted: 28 Nov 2006

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