Abstract Submitted for the MAR17 Meeting of The American Physical Society

Unusual behavior of Superfluid Density of Overdoped Cuprates¹ AABHAAS V. MALLIK, VIJAY B. SHENOY, H. R. KRISHNAMURTHY, Department of Physics, Indian Institute of Science — We theoretically study the superfluid density of overdoped cuprate superconductors within a t-J like model. We show that the temperature dependence of the superfluid density on the overdoped side has very unusual features. We explain the physical origins of this behavior, and show that this can be used to understand the recent experimental results of Bozovic et. al. [Nature 536, 309 (2016)].

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Date submitted: 11 Nov 2016 Electronic form version 1.4