

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Josephson oscillations in superfluid ^4He EMILE HOSKINSON,
RICHARD PACKARD, Dept. of Physics, University of California, Berkeley, CA
— We will describe observations of superfluid oscillations between two samples of ^4He joined by an array of submicron-sized apertures. The fluid oscillates at the Josephson frequency, $f_j = \Delta\mu/h$, where h is Planks constant and $\Delta\mu$ is the full chemical potential difference, containing both temperature and pressure differences. The oscillations are observed at temperatures sufficiently below the superfluid transition temperature T_λ that the current phase relation is linear, ie. not sine-like. Evidently the oscillations are the signature of coherent 2π phase slippage in the array. Work supported in part by grants from the NSF and NASA.

Emile Hoskinson
Dept. of Physics, University of California, Berkeley, CA

Date submitted: 29 Nov 2004

Electronic form version 1.4