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**Kishore Jaganathan\*** ([kishore@caltech.edu](mailto:kishore@caltech.edu)), 1020 E Del Mar Blvd #202, Pasadena, CA 91106. *Phase Retrieval using Masks via Convex Optimization.*

In some applications of the Fourier phase retrieval problem, it is possible to modulate the signal using masks to obtain additional intensity measurements. The best known provable recovery algorithm for this setup involves the use of  $c \log^2 n$  random masks. We show that two random masks, which satisfy very mild conditions, are enough to recover almost all signals uniquely from the intensity measurements. Also, for a specific choice of two masks, we develop a provable recovery algorithm based on semidefinite relaxation. We also show that the recovery is stable in presence of measurement noise. (Received January 17, 2015)