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**Stanley J Osher\*** ([sjo@math.ucla.edu](mailto:sjo@math.ucla.edu)), Stanley Osher, Mathematics Dep't, UCLA, Los Angeles, CA 90095-1555. *Level Set Based Methods for Inverse Problems*. Preliminary report.

We shall discuss new, fast level set based methods for solving a variety of inverse problems. These include: image restoration, interpolating unorganized points, curves and surface patches in 3D, and optimization problems involving geometry and constraints, such as involving frequencies of a two-density inhomogeneous drum. This is joint work with a number of people including F. Santosa, H. K. Zhao, R. Fedkiw, B. Merriman, M. Kang and A. Marquina (Received September 25, 2000)