1043-47-156   **Tzu-Chu Lin*** (`lin@uwm.edu`), Department of Mathematical Sciences, University of Wisconsin-Milwaukee, P. O. Box 413, Milwaukee, WI. *Landweber method and inverse problems.* Preliminary report.

Landweber method is an iteration method for solving an operator equation of the form Kx = y. Some of convergent conditions are related to known conditions of fixed point theory. Many inverse problems lead to integral equations of the first kind Kx = y,where K is an integral operator with continuous or weak singular kernel. These problems are ill-posed. We are interested in nonlinear ill-posed problems. In this talk, we will give a brief introduction to these subjects. The talk will end with an application of Landweber method to an inverse acoustic sound-soft scattering problem. The three dimentional scatterer is numerically reconstructed from the far field pattern by Kleefeld and Lin, an article is in preparation. (Received August 26, 2008)