

1125-44-1008 **Otmar Scherzer*** (`otmar.scherzer@univie.ac.at`), Computational Science Center, University of Vienna, Oskar-Morgenstern Platz 1, 1090 Vienna, Austria. *Parameter Estimation in Optical Coherence Tomography*. Preliminary report.

Optical Coherence Tomography (OCT) is an imaging technique producing high-resolution images of the inner structure of biological tissues. OCT is based on Low Coherence Interferometry (LCI) considering also the coherence properties of light. Standard OCT operates using broadband and continuous wave light and the images are obtained by measuring the time delay and the intensity of backscattered light from the sample.

We consider the inverse scattering problem of OCT to reconstruct the electric susceptibility. The problem is formulated in three dimensions and we approximate the scattered field as a solution of the Maxwell's equations under the second-order Born approximation, considering that the detection point is far enough from the sample. (Received September 14, 2016)