1163-65-1024 **Thomas Schuster*** (thomas.schuster@num.uni-sb.de), Department of Mathematics, Saarland University, 66123 Saarbruecken, Germany, and **Clemens Meiser** and **Anne Wald**. *Data driven acceleration of a parameter identification problem associated with the eikonal equation.*

We deal with the inverse problem of computing the refractive index from time-of-flight measurements which is of great importance, e.g., in terahertz tomography. The mathematical model is given by the eikonal equation. Using training data we accelerate the evaluation of the forward operator, i.e. the solution of the eikonal equation, significantly compared to standard techniques such as marching schemes. This leads also to a more efficient solution of the inverse problem, e.g. by using Landweber's method. (Received September 14, 2020)