

# Verification of magnetic field tomography inverse problem solutions using physical phantoms

## Abstract

Computed tomography is the technique of estimating the interior of objects from measurements through the object, well-known from medical applications. In the case of magnetic field tomography (MFT) ionizing radiation is relieved by magnetic field measurements. The corresponding inverse field problems are usually solved applying minimum norm solutions. The required magnetic field data can be measured using MFT techniques. Then, the current density distribution producing the magnetic field can be reconstructed. We describe inverse MFT techniques applied in bioelectromagnetics and we discuss the possibilities to verify the inverse solution methods. Finally, we use the physical phantoms we have designed for these purposes to verify our computer simulations. Additionally, we discuss visualization tools which enable the evaluation of inverse solutions.

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