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Target Identification Using Dictionary Matching of Generalized Polarization Tensors

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(Submitted on 13 Apr 2012)

The aim of this paper is to provide a fast and efficient procedure for (real-time) target identification in imaging based on matching on a dictionary of precomputed generalized polarization tensors (GPTs). The approach is based on some important properties of the GPTs and new invariants. A new shape representation is given and numerically tested in the presence of measurement noise. The stability and resolution of the proposed identification algorithm is numerically quantified.

Comments:	Keywords: generalized polarization tensors, target identification, shape representation, stability analysis. Submitted to Foundations of Computational Mathematics
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