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CONFIDENCE REGIONS OF INVERSE PROBLEMS MODELS

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Abstract of Poster Prestation: Some inherent difficulties surface when one tries to analyze ill-posed inverse problems. Some of the problems are that the error distribution is unknown or that often the relation between the data and the model is not linear, thus linear regression tools cannot be used. Some regularization methods exist (i.e., Tikhonov regularization) that impose a constraint and help obtain meaningful solutions to ill-posed inverse problems. Another option is to take a Bayesian approach where a probability distribution is given to the unknown model, but then one has to translate the a priori information (the physical constraints) into probabilistic statements. Confidence regions obtained from each approach require very different interpretations, otherwise they may lead to very misleading conclusions. [LM14224221]

[Joint work with Emile Doering]

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