

Testing statistical hypothesis in Inverse
Problems
Prof. Dr. Frank Werner
(Julius-Maximilians-Universität Würzburg)

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In this talk, we propose a regularized approach to hypothesis testing in Inverse Problems in the sense that the underlying estimators or test statistics are allowed to be biased. As one major result we prove that regularized testing is always at least as good as classical unregularized testing. We furthermore provide an adaptive test by maximizing the power functional, which outperforms unregularized tests in numerical simulations by several orders of magnitude.