

RANDOMIZATION IN INVERSE PROBLEMS IN HILBERT SPACE

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ABSTRACT. We discuss randomization strategies for solving ill-posed problems. It is not hard to see that one cannot improve convergence rates by randomization. However, randomized algorithms may be used when discretizing the original infinite dimensional problem (projection schemes). On the one hand side, the dimensionality may be reduced, meaning that matrix inversion is easier to perform. Also, gradient descent algorithms may profit from selecting low-dimensional updates in each step.

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