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Optimal Recovery and Extremum Theory

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Abstract. In this paper optimal recovery problems of linear functionals on classes of smooth and analytic functions on the basis of linear information are considered from the general viewpoint of extremum theory. A general result about the connection of optimal recovery method with Lagrange multipliers of some convex extremal problem is applied to the analysis of classical recovery problems on the generalized Sobolev, Hardy, and Hardy-Sobolev classes.

Keywords. Optimal recovery, Lagrange Principle, Hardy spaces.

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