

BELLMAN FUNCTIONS AND L^p ESTIMATES FOR PARAPRODUCTS

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Abstract: We give an explicit formula for one possible Bellman function associated with the L^p boundedness of dyadic paraproducts regarded as bilinear operators or trilinear forms. Then we apply the same Bellman function in various other settings, to give self-contained alternative proofs of the estimates for several classical operators. These include the martingale paraproducts of Bañuelos and Bennett and the paraproducts with respect to the heat flows.

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