Title: *Polynomial projections onto the lines in $L^p[-1, 1]$ and remarkable extremal pairs*

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Abstract: A continuous function on compact set K will attain its maximum on K. In our setting, it will be natural for us to say that our $C(K)$ functions are maximized at *extremal points* of K. Specifically, through a standard identification, our $C(K)$ elements will be projections from a real Banach space X onto a subspace Y of X; we say that projection $P_{\min} : X \to Y$ is minimal if $\|P_{\min}\| \le \|P\|$ for every projection P from X to Y. We can characterize $P_{\min}$ via its extremal pairs. And when we fix $Y := [1, t]$ $(p \ge 1)$, we find that $P_{\min} : X \to Y$ has rather unexpected, indeed remarkable, extremal pairs – which allows for some interesting conclusion about minimal polynomial projections onto the lines in $L^p[-1,1]$. The motivation behind this is the open question of the determination of $P_{\min} : L^p[1,1] \to Y$ for $p \ge 1$ and $p \ne 2, \infty$.