

RESCALED EXTRAPOLATION FOR VECTOR-VALUED FUNCTIONS

ALEX AMENTA, EMIEL LORIST, AND MARK VERAAR

Abstract: We extend Rubio de Francia's extrapolation theorem for functions valued in UMD Banach function spaces, leading to short proofs of some new and known results. In particular we prove Littlewood–Paley–Rubio de Francia-type estimates and boundedness of variational Carleson operators for Banach function spaces with UMD concavifications.

2010 Mathematics Subject Classification: Primary: 42B25; Secondary: 42A20, 42B15, 42B20, 46E30.

Key words: Extrapolation, Muckenhoupt weights, UMD, Banach function spaces, p -convexity, Hardy–Littlewood maximal function, Fourier multipliers, variational Carleson operator, Littlewood–Paley–Rubio de Francia inequalities.