Marshall A Whittlesey* (mwhittle@csusm.edu), Department of Mathematics, California State University San Marcos, 333 S. Twin Oaks Valley Road, San Marcos, CA 92096. Properties of extremal functions and applications. Preliminary report.

We will look at extremal solutions to the so-called nonlinear Riemann-Hilbert problem on the ball in \mathbb{C}^n . These extremal functions tend to satisfy interesting properties over the boundary of the ball. We will see that the cases n = 1 and n > 1 are different - but present a theorem illustrating that under useful circumstances they can be similar. (Received February 18, 2005)