ETNA Kent State University etna@mcs.kent.edu

ON THE SUPPORT OF THE EQUILIBRIUM MEASURE FOR ARCS OF THE UNIT CIRCLE AND FOR REAL INTERVALS*

D. BENKO † , S. B. DAMELIN ‡ , AND P. D. DRAGNEV §

Dedicated to Ed Saff on the occasion of his 60th birthday

Abstract. We study the support of the equilibrium measure for weights defined on arcs of the unit circle and on intervals of the compactified real line. We provide several conditions to ensure that the support of the equilibrium measure is one interval or one arc.

Key words. logarthmic potential theory, external fields, equilibrium measure, equilibrium support

AMS subject classifications. 31A15, 30C15, 78A30

^{*}Received May 14, 2005. Accepted for publication January 6, 2006. Recommended by D. Lubinsky.

[†]Department of Mathematics, Western Kentucky University, Bowling Green, KY 42101 (dbenko2006@yahoo.com).

[‡]Institute for Mathematics and its Applications, University of Minnesota, 400 Lind Hall, 207 Church Hill, S.E., Minneapolis, MN 55455 (damelin@ima.umn.edu). Supported, in part by grants EP/C000285 and NSF-DMS-0439734. S. B. Damelin thanks the Institute for Mathematics and Applications for their hospitality.

 $[\]S$ Department of Mathematical Sciences, Indiana-Purdue University, Fort Wayne, IN 46805 (dragnevp@ipfw.edu).