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UB- Aula T2

<http://mat.uab.cat/Analisi/wordpress/>

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## **Asymptotic behavior of $p$ th means of subharmonic functions and angular distribution of Riesz measure**

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We propose a new approach for studying asymptotic behaviour of  $p$ th means of the logarithmic potential and classes of analytic and subharmonic functions in the unit disc. In particular, we generalize a criterion due to G.MacLane and L.Rubel of boundedness of the  $L_2$ -norm of  $\log|B|$ , where  $B$  is a Blaschke product, in several directions. We describe growth and decrease of  $p$ th means,  $p \in (1, \infty)$ , for nonpositive subharmonic functions in the unit disc. As a consequence, we obtain a complete description of asymptotic behaviour of  $p$ th logarithmic means of bounded analytic functions in the unit disc in terms of its zeros and the boundary measure. We also prove sharp upper estimates of  $p$ th means of analytic and subharmonic functions of finite order in the unit disc.