

WEIERSTRASS' THEOREM IN WEIGHTED SOBOLEV SPACES WITH K DERIVATIVES: ANNOUNCEMENT OF RESULTS*

ANA PORTILLA[†], YAMILET QUINTANA[‡], JOSE M. RODRIGUEZ[†], AND EVA TOURIS[†]

Abstract. We characterize the set of functions which can be approximated by smooth functions and by polynomials with the norm

$$\|f\|_{W^{k,\infty}(w)} := \sum_{j=0}^k \|f^{(j)}\|_{L^\infty(w_j)},$$

for a wide range of (even non-bounded) weights w_j 's. We allow a great deal of independence among the weights w_j 's.

Key words. Weierstrass' theorem, weight, Sobolev spaces, weighted Sobolev spaces

AMS subject classifications. 41A10, 46E35, 46G10

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[†]Departamento de Matemáticas, Universidad Carlos III de Madrid, 30 Avenida de la Universidad, 28911 Leganés (Madrid), SPAIN (apferrei, jomaro, etouris@math.uc3m.es). Research partially supported by a grant from DGI(BFM 2003-04870), Spain. Ana Portilla and Jose M. Rodriguez are also partially supported by a grant from DGI(BFM 2003-06335-C03-02), Spain.

[‡]Departamento de Matemáticas Puras y Aplicadas, Edificio Matemáticas y Sistemas (MYS), Apartado Postal: 89000, Caracas 1080 A, Universidad Simón Bolívar, Caracas, Venezuela (yquintana@usb.ve).