



DEPARTAMENTO
DE ANÁLISIS
MATEMÁTICO Y
MATEMÁTICA
APLICADA



Facultad de Ciencias
MATEMÁTICAS



COLLOQUIUM DE ANÁLISIS MATEMÁTICO

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Words of analytic paraproducts on Bergman spaces

Resumen:

An N -letter g -word is the composition $L = L_1 \cdots L_N$ of N operators L_j , where each L_j is either of the analytic paraproducts $T_g f(z) = \int_0^1 \int_D f(\zeta) g(z, \zeta) d\zeta$, $S_g f(z) = \int_0^1 \int_D f(\zeta) g(\zeta, z) d\zeta$ and $M_g f(z) = (fg)(z)$, defined on the unit disc D . The boundedness of a single paraproduct on a classical weighted Bergman space $A_{p, \alpha}$ is well understood and the bounded 2-letter g -words on $A_{p, \alpha}$ have been recently described in a recent joint paper with A. Aleman, J. Fabrega, D. Pascuas and J.A. Peláez. We prove that the boundedness of a N -letter g -word on $A_{p, \alpha}$ only depends on the symbol g , N and the total number n of T_g 's that it contains. In fact, if $n \geq 1$ then an N -letter g -word L is bounded on $A_{p, \alpha}$ if and only if g belongs to the Bloch class of power functions $B_{N, n} = \{h \text{ analytic on } D : \|h\|_{B_{N, n}} = \sup_{z \in D} (1 - |z|^2)^{n-1} |h(z)| < \infty\}$, and moreover $\|L\|_{A_{p, \alpha}} \leq C \|g\|_{B_{N, n}}$. If $n = 0$, then L is bounded on $A_{p, \alpha}$ if and only if $g \in H^\infty$, and $\|L\|_{A_{p, \alpha}} \leq C \|g\|_{H^\infty}$. This is a joint work in process.

Organizado por el Departamento de Análisis Matemático y Matemática Aplicada
y el Instituto de Matemática Interdisciplinar (IMI)

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Lugar: Aula 222

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