

BOUNDEDNESS OF THE BERGMAN PROJECTION ON GENERALIZED FOCK-SOBOLEV SPACES ON \mathbb{C}^n

ABSTRACT. Let $\ell > 0$. For $1 \leq p < \infty$, $\alpha > 0$ and $\rho \in \mathbb{R}$, the space $L_{\alpha,\rho}^{p,\ell} = L_{\alpha,\rho}^p$ consists of all measurable functions f on \mathbb{C}^n such that

$$\|f\|_{L_{\alpha,\rho}^p}^p := \int_{\mathbb{C}^n} |f(z)(1+|z|)^\rho e^{-\frac{\alpha}{2}|z|^{2\ell}}|^p dV(z) < \infty.$$

The generalized Fock-Sobolev space $F_{\alpha,\rho}^p$ is the subspace of $L_{\alpha,\rho}^p$ of entire functions in \mathbb{C}^n .

We give a description of the embeddings between generalized Fock-Sobolev spaces and a characterization of the boundedness of the Bergman type projections between weighted L^p -spaces related to generalized Fock-Sobolev spaces. As a consequence we answer a question posed by H. Bommier-Hato, M. Engliš and E.H. Youssfi. This is a joint work with Joan Fàbrega and Daniel Pascuas.