Geraldo Soares de Souza, Department of Mathematics, Auburn University, AL 36849

ON THE BOUNDARY VALUE OF BESOV-BERGMAN SPACES

Dedicated to Arnaldo Antonio de Souza and Corina Soares de Souza, my parents.

Let b denote a special atom, $b: [-\pi,\pi) \to R$, $b(t) = 1/2\pi$ or for any interval I in $[-\pi,\pi)$, $b(t) = -|I|^{-1/p}\chi_R(t) + |I|^{-1/p}\chi_L(t)$, L is the left half of I, R the right half, $|I|$ denotes the length of I and χ_E the characteristic function of E. For $1/2 < p < \infty$, let (b_n) be special atoms and (c_n) a sequence of real numbers, then we define the space $B^p = \{f: [-\pi,\pi) \to R;\ f(t) = \sum c_n b_n(t),\ \sum |c_n| < \infty\}$. We endow B^p with norm $\|f\|_{B^p} = \text{Inf} \sum |c_n|$, where the infimum is taken over all possible representations of f.

These spaces were originally introduced by the author who has extensively studied them. The reader is referred to [2], [3], [4], [5], [6], [7], [8], [9] and [10].

In the early 1960's the following spaces were introduced, now known as Besov-Bergman Spaces. For $0 < \alpha < 1$, $1 \leq r, s \leq \infty$, let

$$\Lambda(\alpha,r,s)=\{f: [-\pi,\pi) \to R;\ \|f\|_{\Lambda(\alpha,r,s)} = \|f\|_r + \left(\int_{-\pi}^{\pi} \frac{(\|f(x+t)-f(x)\|_r)^s}{|t|^{1+\alpha s}} dt\right)^{1/s} < \infty\}.$$

where $\|\ \|_r$ is the Lebesgue Space L^r-norm.

These spaces have been studied in depth in [1], [11], [12], [13] and [14].

We have the following result.