1107-30-368 **Gerardo R Chacon*** (grchacon@gmail.com), 800 Florida Avenue NE, Department of Science, Technology, and Mathematics, HMB S340G, Washington, DC 20002. *Variable Exponent Bergman Spaces.*

Let $\mathbb{D}$ denote the open unit disk in the complex plane and dA the normalized Lebesgue measure on $\mathbb{D}$. For a given $1 \leqslant p < \infty$ define the *Bergman space* $A^p(\mathbb{D})$ as the space of all analytic functions on $\mathbb{D}$ that satisfies:

$$\|f\|_{A^p}^p := \int_{\mathbb{D}} |f(z)|^p dA(z) < \infty.$$

The theory of Bergman spaces were introduced by S. Bergman and since the 1990s it has gained a lot of attention mainly due to some major breakthroughs at the time. Variable Lebesgue spaces are a generalization of Lebesgue spaces where we allow the exponent to be a measurable function and thus the exponent may vary.

We will define variable exponent Bergman spaces and show some fundamental properties. We consider this to be an interesting topic since the classical approach to Bergman spaces seems to fail in the variable framework. To circumvent this problem, we rely on techniques from real harmonic analysis, variable exponent spaces and complex function theory. (Received January 19, 2015)