Meeting: 1003, Atlanta, Georgia, SS 25A, AMS Special Session on Complex and Functional Analysis, I

1003-30-1276 **Valentin V. Andreev*** (andreev@math.lamar.edu), Department of Mathematics, Lamar University, Beaumont, TX 77710. *The Identity Maximizes the Chang-Marshall Inequality over the Beurling Functions.*

S.-Y. A. Chang and D. E. Marshall showed that the functional $\Lambda(f) = (1/2\pi)\int_0^{2\pi} \exp\{|f(e^{i\theta})|^2\}d\theta$ is bounded on the unit ball $\mathcal{B}$ of the space $\mathcal{D}$ of analytic functions in the unit disk with $f(0) = 0$ and Dirichlet integral not exceeding one. Andreev and Matheson conjectured that the identity function $f(z) = z$ is a global maximum on $\mathcal{B}$ for the functional Λ. We prove that Λ attains its maximum at $f(z) = z$ over a subset of $\mathcal{B}$ determined by kernel functions, which provides a positive answer to a conjecture of Cima and Matheson. We use the theory of the *-function introduced by Albert Baernstein, II. (Received October 04, 2004)