1046-41-595 **Vasiliy A. Prokhorov*** (`prokhoro@jaguar1.usouthal.edu`), Department of Mathematics and Statistics, ILB 325, University of South Alabama, Mobile, AL 36688, and **Dmitri V. Prokhorov** (`dprokhor@shell.cas.usf.edu`), Department of Mathematics and Statistics, 4202 East Fowler Ave, PHY114, University of South Florida, Tampa, FL 33620-5700. *On some bilinear symmetric forms and meromorphic continuation of analytic functions.* Preliminary report.

Let f be a function analytic in the open disk $\{z : |z| < R\}, R > 1$. In this talk we consider a bilinear symmetric form defined on the class of polynomials of degree at most m:

$$[u, v] = \frac{1}{2\pi i} \int_\Gamma \frac{(uvf)(t)dt}{t^{n+m}}, \ \deg u \leq m, \quad \deg v \leq m,$$

where Γ is the unit circle with center at zero and n is a nonnegative integer. Let $\langle u, v\rangle$ be the inner product in the space $L_2(\Gamma)$. There are the polynomials $Q_{k,n}$, $\deg Q_{k,n} \leq m$, $k = 0, \dots, m$, characterized by the double orthogonality conditions:

$$[Q_{i,n}, Q_{j,n}] = \lambda_{i,n}\delta_{ij}, \ \langle Q_{i,n}, Q_{j,n}\rangle = \delta_{ij},$$

where δ_{ij} is Kronecker's symbol and $\lambda_{0,n} \geq \dots \geq \lambda_{m,n} \geq 0$ are the characteristic values of the bilinear symmetric form $[u, v]$. We investigated asymptotic behavior of $\lambda_{k,n}$, zeros of $Q_{k,n}$, and the connection of degree of convergence with meromorphic continuation of the function f in the case when k and m, $0 \leq k \leq m$, are fixed, and $n \to \infty$. (Received September 08, 2008)