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Ian L. Charlesworth* (ilc@math.ucla.edu) and **Dimitri Shlyakhtenko**. *Regularity of polynomials in non-commuting random variables.*

Given an n -tuple of non-commuting random variables y_1, \dots, y_n and a polynomial P in n indeterminates, we examine how the spectral distribution of $y = P(y_1, \dots, y_n)$ is effected by certain assumptions on the variables and the polynomial P . We show that assuming the existence of a dual system to y_1, \dots, y_n , the spectral measure of y cannot be singular with respect to Lebesgue measure, and if P is assumed to be homogeneous, the spectral measure of y is Lebesgue absolutely continuous. (Received August 24, 2015)