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Yi Wang* (yiwangfdu@gmail.com), **Ronald G. Douglas**, **Kunyu Guo** and **Jingbo Xia**. *A harmonic analysis approach to the Arveson-Douglas Conjecture.*

Let I be a homogeneous ideal in the polynomial ring $\mathbb{C}[z_1, \dots, z_n]$ and let $[I]$ be its closure either in the Drury-Arveson space H_n^2 , the Hardy space $H^2(\mathbb{B}_n)$ or the Bergman space $L_a^2(\mathbb{B}_n)$. One defines a $\mathbb{C}[z_1, \dots, z_n]$ module structure on $[I]$ by considering the restrictions $R_i = M_{z_i}|_{[I]}$. The Arveson-Douglas Conjecture says that the module actions are essentially normal, i.e., the cross commutators $[R_i, R_j^*]$ are compact. The form of these commutators resembles that of a Hankel operator but more is involved. I will present our recent results on this conjecture obtained using tools from harmonic analysis and several complex variables. (Received February 13, 2018)