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**Ronald G Douglas\*** (rgd@tamu.edu), Texas A&M University Mathematics, MS 3368, College Station, TX 778433368. *A New Index Theorem for Monomial Ideals by Resolutions.*

Along with framing the conjecture by Arveson that the closure of a homogeneous polynomial ideal in a Drury-Arveson space is essentially normal, he established it for ideals generated by monomials. Later, the first author showed this conjecture is also valid for the closure of arbitrary ideals generated by monomials in the Bergman space.

In this paper the authors establish this result using a new approach which also yields an index formula. In particular, such ideals are shown to have resolutions by Bergman-like modules.

In this talk we examine some simple cases of this result attempting to clarify the relation between the combinatorial and geometrical pictures. We will conclude by discussing some possible generalizations of these results. (Received August 30, 2017)