

1116-47-1175      **Ronald G Douglas\*** (rdouglas@math.tamu.edu), Dept of Mathematics, College Station, TX  
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In the study of multivariable operator theory, one approach is using methods from algebra and in particular studying Hilbert spaces, which are modules over them; that is, actions of the algebra as bounded linear operators on the Hilbert space, where the algebra acts via bounded linear operators on the Hilbert space. One advantage in this approach is the possibility of bringing results and intuition from algebra into the subject.

In lecture notes by Paulson and myself, we attempted to introduce a notion of projective resolutions into this study. Since then, it was found that the only example for where this is successfully is appropriate is the Hardy space on the unit disc.

In this talk we explore a somewhat different approach to projective resolutions, where the basic building blocks are “nice reproducing kernel Hilbert spaces” on which the algebra acts as multiplication operators. For the most part, we will raise questions and suggest topics for further study. (Received September 17, 2015)