A characterization of the bounded derivations from the disk algebra to its dual

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We show that the space of all bounded derivations from the disk algebra into its dual can be identified with the Hardy space H^1; using this, we infer that all such derivations are compact. Also, given a fixed derivation D, we construct a finite, positive Borel measure μ_D on the closed disk, such that D factors through $L^2(\mu_D)$. Such a measure is known to exist, for any bounded linear map from the disk algebra to its dual, by results of Bourgain and Pietsch, but these results are highly non-constructive.

This talk is based on joint work with Y. Choi.