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Corona Theorems for Multiplier Algebras on \mathbb{B}_n

Carleson's Corona Theorem from the 1960's has served as a major motivation for many results in complex function theory, operator theory and harmonic analysis. In a simple form, the result states that for $N \geq 2$ bounded analytic functions, f_1, \dots, f_N on the unit disc with no common zeros in a quantitative sense, it is possible to find N other bounded analytic functions, g_1, \dots, g_N such that $f_1 g_1 + \dots + f_N g_N = 1$. Moreover, the functions g_1, \dots, g_N can be chosen with some norm control. In this talk we will discuss some new generalizations of this result to certain function spaces on the unit ball in several complex variables. In particular, we will highlight the Corona Theorem for the Drury–Arveson space and for the space of BMO analytic functions.

This is joint work with Eric T. Sawyer and Brett D. Wick.