Uniqueness of Preduals for some Analytic function spaces

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An early result of Grothendieck says that if we have a Banach space X whose dual is isomorphic to $L^\infty(X, \mu)$, then it is isomorphic to $L^1(X, \mu)$, i.e. $L^\infty(X, \mu)$ has a unique (isometric)predual. The problem of determining which dual Banach spaces have unique preduals and characterizing this property has been well studied. In 1973, Ando showed that $H^\infty(\mathbb{D})$ has a unique predual. In this talk, we generalize Ando's result to other domains in the plane, explain what led us to thinking about this problem and indicate why this result is interesting.

This is joint work with Onur Yavuz at Sabanci University.