NORM CONTROLLED INVERSIONS AND A CORONA THEOREM FOR $H^\infty$-QUOTIENT ALGEBRAS

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Abstract. Let $\Theta$ be an inner function on the unit disc $\mathbb{D}$. We give a description of those $\Theta$ for which the quotient algebra $H^\infty/\Theta H^\infty$ has no corona with respect to the visible part of its spectrum, that is for which $M(H^\infty/\Theta H^\infty) = \{z \in \mathbb{D} : \Theta(z) = 0\}^{M(H^\infty)}$. It happens that this property is equivalent to the norm controlled inversion property for $H^\infty/\Theta H^\infty$, as well as to a kind of weakened Carleson type embedding theorem. The quotient algebra $A(\mathbb{D})/\Theta H^\infty$ is also considered. An interpretation of our main results in terms of model operators is given, too.