ISOMORPHISMS BETWEEN CORONA ALGEBRAS OF THE FORM $\prod_n M_{k(n)}(\mathbb{C})/\bigoplus_n M_{k(n)}(\mathbb{C})$

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Abstract. The coronas of the direct sums of full matrix algebras, $\bigoplus_n M_{k(n)}(\mathbb{C})$, play an important role in the theory of operator algebras and quasi-diagonal C*-algebras. I will present my result which shows that it is consistent with ZFC that all isomorphisms between such corona algebras are trivial in the strongest possible sense. This generalizes Farah-Shelah's result which corresponds to the case where the maps between the centers of these C*-algebras are considered. On the other hand an extension of the Feferman-Vaught theorem to reduced products of metric structures shows that there are two separable C*-algebras of the form $\bigoplus_i M_{k(i)}(\mathbb{C})$ such that the assertion that "their coronas are isomorphic" is independent from ZFC. This gives the first example of genuinely non-commutative coronas of separable C*-algebras with this property.

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