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**MARIA-GRAZIA VIOLA**, Lakehead University

*C\*-algebras non-isomorphic to their opposite algebras and the UCT*

There are several examples in the literature of factors of type  $II_1$  and type III which are not isomorphic to their opposite algebras. Since a  $C^*$ -algebra isomorphism of von Neumann algebras is necessarily a von Neumann algebra isomorphism, these are also examples of simple  $C^*$ -algebras not isomorphic to their opposite algebras. However, none of these examples is separable or exact in the  $C^*$ -algebra sense. We show that there exist uncountably many mutually nonisomorphic simple separable stably finite unital exact  $C^*$ -algebras which are not isomorphic to their opposite algebras. In particular, we prove that there are uncountably many possibilities for the  $K_0$ -group, the  $K_1$ -group, and the tracial state space of such an algebra. We also show that these  $C^*$ -algebras satisfy the Universal Coefficient Theorem. This is joint work with C. Phillips.