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**Chris Jennings-Shaffer\***, chrisjenningsshaffer@gmail.com, and **Antun Milas**. *Some Rogers-Ramanujan Type Identities with False Theta Functions.*

The Rogers-Ramanujan identities are two classical identities relating certain basic hypergeometric series with infinite products. Originally due to Rogers and rediscovered by Ramanujan, these identities have found their way into subjects including number theory, combinatorics, vertex operator algebras, statistical mechanics, and more. In every derivation of these identities, the infinite product comes from applying the Jacobi triple product identity to a classical theta function. Theta functions are well studied objects and of great importance due to their modular properties, and in simplest terms may be viewed as a sum over the integers of a variable raised to a quadratic term. False theta functions arise from a change in the sign of certain summands, and are not modular. While nearly as old as theta functions, false theta functions have attracted attention recently as they appear almost as often as theta functions, but their properties are not well studied.

We give a few new Rogers-Ramanujan type identities where the "product side" is not a product, but a false theta function. These false theta functions arise as the characters of irreducible modules for the  $N=1$  super-singlet superalgebra. The key ingredient in proving these new identities is Bailey's lemma. (Received September 11, 2021)