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Olivia Chandrasekhar* (olivia.chandrasekhar@coloradocollege.edu), **Hanbo Shao** and **Michael Penn**. *Invariants of the Free-Fermion Vertex Algebra under the Action of $\mathbb{Z}/2$* .

Many authors, most famously H. Weyl in the early 20th century, have studied rings of polynomial invariants. More recently, A. Linshaw and co-authors adapted classical invariant theory to study the invariance of vertex algebras. Drawing on Linshaw's methods, our work describes a linear isomorphism from classically invariant polynomial rings to quantum operator algebras that allows us to apply the first fundamental theorem of invariant theory. Specifically, we study the invariance of the rank n free-fermion vertex algebra under the action of the $\mathbb{Z}/2$ group and obtain its minimal generating set. (Received September 20, 2016)