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Santiago, Chile. *A Weil representation for the finite split orthogonal group $O_q(2n, 2n)$, q odd greater than 3.*

$SL_*^\varepsilon(2, A)$ groups, where $\varepsilon = \pm 1$ and A is a unitary ring provided with an involution $*$ are a generalization of the special linear groups $SL_2(F)$, where F is a field. They were defined for $\varepsilon = -1$ by Pantoja and Soto-Andrade and then widespread to $\varepsilon = 1$ by the same authors. These groups allow to look at classical groups of higher rank like groups of rank two, considering them with coefficients in a new ring and in that way generalize some known techniques and methods for traditional special linear groups in order to get results in these more general groups. Moreover, Weil representations have proven to be a powerful tool in representation theory. In particular, they have allowed to build in an uniform and universal way all the irreducible complex linear representations of the symplectic group $Sp(4, \mathbb{F}_q)$ and of the group $SL_2(F)$ when F is a finite field or F is a local field, except in residual characteristic two. In this work, we construct a generalized Weil representation of the finite split orthogonal group $O_q(2n, 2n)$. For this, we look at the group as a $SL_*^\varepsilon(2, A)$ group, and in this way we use a Bruhat presentation and the method described by Gutierrez, Pantoja and Soto-Andrade. (Received May 10, 2013)