I will define metaplectic in a way similar to spinor group.

Consider the vector space $V \oplus V^*$ with canonical symplectic form $< \, , \, >$.

Let $\hat{a} = \hat{a}_{\mathbf{X}}$ be a linear operator which is canonically assigned to the vector $\mathbf{R}$, such that

$$[\hat{a}_{\mathbf{X}} \, , \hat{a}_{\mathbf{Y}}] = < \mathbf{x}, \mathbf{Y} > \ . \tag{1}$$

We consider transformations on the space of functions on V such that for an arbitrary $\mathbf{X} \in V \oplus V^*$,

$$S^{-1} a_{\mathbf{X}} S = a_{F(\mathbf{X})} \tag{2}$$

One can see that for an arbitrary vectors $\mathbf{X}, \mathbf{Y} \in V \oplus V^*$,

$$< \mathbf{X}, \mathbf{Y} > = \langle F(\mathbf{X}), F(\mathbf{Y}) \rangle \ .$$

Thus we define the group of transformations of space of the functions on V, metaplectic group, and its epimorphsim on symplectic group.

Now instead V consider the space C^n, and assign to every vector $\mathbf{X}$, the matrix $M_{\mathbf{X}} = X^m \gamma_m$.

We have instead equation (1) the following relation:

$$[M_{\mathbf{X}} \, , M_{\mathbf{Y}}]_+ = 2 < \mathbf{x}, \mathbf{Y} > \ . \tag{1a}$$

where $[\ , \ ]_+$ is the anticommutator, and $< \, , \, >$ now is the scalar product.

Now instead equation (2) we come to consider transformations O on the space matrices such that for an arbitrary $\mathbf{X} \in C^n$

$$O^{-1} M_{\mathbf{X}} O = M_{F(\mathbf{X})} \tag{2a}$$

One can see that for an arbitrary vectors $\mathbf{X}, \mathbf{Y}$,

$$< \mathbf{X}, \mathbf{Y} > = \langle F(\mathbf{X}), F(\mathbf{Y}) \rangle \ .$$

Thus we define the group ofpinor transformations and its epimorphsim on orthogonal group.