Majorana Mass term for electron - Left handed.

$$\mathcal{L} = -\frac{1}{2} M_L \overline{\psi_L^c} \psi_L$$

$\longrightarrow$ CP conjugate field

for $U(1)$ global transformation

$$\psi \rightarrow \psi' = e^{i\alpha\phi}\psi$$

$$= -\frac{1}{2} M_L \overline{(e^{i\alpha\phi}\psi)^c} \cdot e^{i\alpha\phi}\psi$$

$$= -\frac{1}{2} M_L \overline{e^{-i\alpha\phi} i\gamma^2 \psi^*} e^{i\alpha\phi}\psi$$

$$= -\frac{1}{2} M_L e^{i\alpha\phi} \overline{\psi^c} e^{i\alpha\phi}\psi$$

$$\mathcal{L}' = -\frac{1}{2} M_L e^{2i\alpha\phi} \overline{\psi_c^c}\psi \neq \mathcal{L}$$

$$\mathcal{L}' \neq \mathcal{L}$$

Not invariant