Propagators

Time-ordered Green function:

$$\langle 0|\, T\, \psi_\alpha(x)\, \bar{\psi}_\beta(x')\, |0\rangle = \theta(x_0-x_0')\, \underbrace{\langle 0|\, \psi_\alpha(x)\, \bar{\psi}_\beta(x')|0\rangle}_{G^>} + \theta(x_0'-x_0)\, \underbrace{\langle 0|\bar{\psi}_\beta(x')\,\psi_\alpha(x)|0\rangle}_{G^<}$$

$$G^>(x-x') = \langle 0|\, \psi_\alpha(x)\, \bar{\psi}_\beta(x')\, |0\rangle$$

$$= \int \frac{d^3p}{(2\pi)^3}\frac{d^3p'}{(2\pi)^3}\frac{1}{2\sqrt{\omega_p\omega_{p'}}}\sum_{s,s'} \langle 0|\left(\underline{\hat{a}_{\vec{p},s}\, u_\alpha^{[s]}(\vec{p})\, e^{-ip.x}} + \hat{a}^\dagger_{\vec{p},s}\, v_\alpha^{[s]}(\vec{p})\, e^{ip.x}\right)$$

$$\times\left(\underline{\hat{a}^\dagger_{\vec{p}',s'}\, \bar{u}_\beta^{[s']}(\vec{p}')\, e^{ip'.x'}} + \hat{a}_{\vec{p}',s'}\, \bar{v}_\beta^{[s]}(\vec{p}')\, e^{-ip'.x'}\right)|0\rangle$$

Only one term contributes, so computation proceeds exactly as in Dirac case.

$$\therefore \boxed{\langle 0|\, T\, \psi_\alpha(x)\, \bar{\psi}_\beta(x')|0\rangle = \int \frac{d^4p}{(2\pi)^4}\, e^{-ip.(x-x')}\, \frac{i(\not{p}+m)_{\alpha\beta}}{p^2-m^2+i\epsilon}}$$

That the Majorana spinor has half as many degrees of freedom as a Dirac fermion is encoded in the factor $1/2$ in the canonically normalized Majorana kinetic term.

Two more Majorana-type propagators:

$$\psi^c = \psi = C\bar{\psi}^T \quad\Rightarrow\quad \bar{\psi}^T = C^{-1}\psi$$

$$\bar{\psi}^c = \bar{\psi} = -\psi^T C^{-1} \quad\Rightarrow\quad \psi^T = -\bar{\psi}C$$

Then,

$$\boxed{\begin{aligned} \langle 0|\, T\, \psi_\alpha(x)\, \bar{\psi}_\gamma(x')^T|0\rangle &= \langle 0|\, T\, \psi_\alpha(x)\, \bar{\psi}_\beta(x')\, |0\rangle\, (-C)_{\beta\gamma} \\ \langle 0|\, T\, \bar{\psi}_\alpha(x)^T\, \bar{\psi}_\gamma(x')|0\rangle &= (C^{-1})_{\alpha\beta}\, \langle 0|\, T\, \psi_\beta(x)\, \bar{\psi}_\gamma(x')\, |0\rangle \end{aligned}}$$