$$F^{s_x}_{\ell\ell' L'} \stackrel{\text{def}}{=} \left[-\ell\left(\ell+1\right)+\ell'\left(\ell'+1\right)+L'\left(L'+1\right)\right]\sqrt{\frac{\left(2\ell+1\right)\left(2\ell'+1\right)\left(2L'+1\right)}{16\pi}}\begin{pmatrix} \ell & \ell' & L' \\ -s_x & s_x & 0 \end{pmatrix} \tag{1}$$

$$\Theta(\hat{\mathbf{n}}), Q(\hat{\mathbf{n}}), U(\hat{\mathbf{n}}) \tag{2}$$

$$Q \pm iU \rightarrow e^{\pm 2i\theta}(Q \pm iU) \tag{3}$$

$$\Theta \rightarrow \Theta \tag{4}$$

$$\Theta(\hat{n}) = \sum_{\ell m} \Theta^m_\ell Y^m_\ell(\hat{n}) \tag{5}$$

$$Q \pm iU \rightarrow e^{\pm 2i\theta}(Q \pm iU) \tag{6}$$

$$(Q \pm iU)(\hat{n}) = -\sum_{\ell m} \left(E^m_\ell \pm iB^m_\ell\right)_2 Y^m_\ell(\hat{n}) \tag{7}$$

$$\left\langle a^m_l b^{m'}_{l'} \right\rangle = C^{ab}_l \delta_{ll'}\delta_{m-m'}(-1)^m \tag{8}$$

$$\phi(\hat{n}) = \sum_{\ell m} \phi^m_\ell Y^m_\ell(\hat{n}) \tag{9}$$

$$\left\langle a\left(\mathbf{l}_1\right) b\left(\mathbf{l}_2\right)\right\rangle = (2\pi)^2 \delta^2\left(\mathbf{l}_1 + \mathbf{l}_2\right) C^{ab}_\ell \tag{10}$$

$$\left.\left\langle a\left(\mathbf{l}_1\right) b\left(\mathbf{l}_2\right)\right\rangle\right|_{lens} = (2\pi)^2 \delta^2\left(\mathbf{l}_1 + \mathbf{l}_2\right) C^{ab}_\ell + \phi_{\mathbf{L}} f\left(\ell_1, \ell_2\right) \tag{11}$$

$$\left\langle a^m_l b^{m'}_{l'} \right\rangle = C^{ab}_l \delta_{ll'}\delta_{m-m'}(-1)^m \tag{12}$$

$$\left.\left\langle a^m_l b^{m'}_{l'} \right\rangle\right|_{\text{lens}} = C^{ab}_l \delta_{ll'}\delta_{m-m'}(-1)^m + \sum_{LM}(-1)^M \begin{pmatrix} l & l' & L \\ m & m' & -M \end{pmatrix} f^\alpha_{lLl'}\phi^M_L \tag{13}$$

$$\phi(\mathbf{l}) \tag{14}$$

$$\left\langle d_L^{\alpha M} \right\rangle_{CMB} = \sqrt{L(L+1)}\phi_L^M \tag{15}$$

$$d_{\theta\theta}(\mathbf{L}) = \frac{A_{\theta\theta}(L)}{L} \int \frac{d^2 l_1}{(2\pi)^2} \Theta\left(\mathbf{l}_1\right) \Theta'\left(\mathbf{l}_2\right) F_{\theta\theta}\left(1_1, 1_2\right) \tag{16}$$

$$\Theta = \Theta_p + \Theta^{kSZ} \tag{17}$$

$$\langle\theta\theta\rangle \tag{18}$$

l_{max}

$\Theta(\hat{n})$

$Q(\hat{n})$

$U(\hat{n})$