

```

TL[x : X[i_, j_, k_, l_]] :=
  TL@If[PositiveQ[x], X_{i,j,k,-l}, \bar{X}_{-j,k,l,-i}];

TL[(x : X | \bar{X})_{fs__}] := Module[{t = 1 - \omega, r, \eta s, m},
  r = t + t^*; \eta s = \eta_{\#} \& /@ {fs};
  m = If[x === X,
    \left( \begin{array}{cccc} -r & -t & 2t & t^* \\ -t^* & 0 & t^* & 0 \\ 2t^* & t & -r & -t^* \\ t & 0 & -t & 0 \end{array} \right), \left( \begin{array}{cccc} r & -t & -2t^* & t^* \\ -t^* & 0 & t^* & 0 \\ -2t & t & r & -t^* \\ t & 0 & -t & 0 \end{array} \right)];
  CF@_{\Sigma_B[\{fs\}]}[0, PQ[\{\}, \eta s^* . m . \eta s]]]

```