```mathematica
TLS1[K_, ω_] := Module[{spd, a, s = 0, c, cs, A, is},
  spd = Times @@ PD[K] /.
    x_X :> If[PositiveQ@x, Xp, Xm] @@ x;
  cs = spd /. {
      Xp[i_, j_, k_, l_] :> a_{j,i}[++s] a_{k,-j}[++s]
        a_{-l,-k}[++s] a_{-i,l}[++s],
      Xm[i_, j_, k_, l_] :>
        a_{-j,i}[++s] a_{k,j}[++s] a_{l,-k}[++s] a_{-i,-l}[++s]
     } //. a_{i_,j_}[x__] a_{j_,k_}[y__] :> a_{i,k}[x, y] /.
   a__[x__] :> a[x];
  A = Table[0, Length@cs, Length@cs];
  Do[is = Position[cs, 4 i - #][[1, 1]] & /@
    {3, 2, 1, 0};
   A[[is, is]] += If[spd[[i, 0]] === Xp,

    (  0  0  0  0 )   (  1 -1  0  0 )
    (  1 -1  0  0 )   (  0  0  0  0 )
    (  0 -1  0  1 ) , ( -2  1  1  0 )],
    ( -1  2  0 -1 )   (  1  0 -1  0 )

   {i, Length[spd]} ];
  Total[Sign[Select[
    Eigenvalues[(1 - ω) A + (1 - ω*) A^T],
    Abs[#] > 10^-6 &]] ] ];
```