

Printout of modal parameters

This option is available in the “Output options” tab of the “Line Data” device for Line Parameters.

Modal parameters are calculated from the exact phase domain \mathbf{Z} and \mathbf{Y} matrices at the specified frequency. The modal transformation matrix \mathbf{T}_i is also presented in the output file. In all these calculations the shunt conductance matrix \mathbf{G} is assumed to be zero.

In addition to the “Exact modal parameters”, the user can request:

- **Exact modal parameters with $\mathbf{R}=\mathbf{0}$:** The resistances are set to zero before the modal parameters are calculated. The modal parameters are then evaluated exactly. This produces a lossless approximation. The wave velocity of the zero sequence mode will be less than the wave velocity of the aerial modes, which is closer to the actual exact case.
- **Lossless high frequency approximation:** Resistances are ignored and modal quantities are calculated from *high-frequency approximations*. This approximation is often used in lightning studies.