Lumped Parameter Lines: ATP

- All three model coupled branches
- Can do varying number of phases (up to 6)
- Can do several hundred phases when create by hand

Coupled PI: ATP

- Good for short lines or cables
- Often need 10 segments for accurate line model
- Enter the matrix data in the menu
- Notice the scroll bar
Coupled RL: ATP

- Enter using coupled-pi
- Don’t enter capacitance values
- Use for network equivalent
- Up to 6 phases (coupled lines)

Coupled RL-Symmetrical Component Equivalent

- Variation on coupled-RL
- Now do a symmetrical components equivalent
- Positive and zero sequence
Distributed Parameter Lines: ATP

- Transposed or untransposed options
- Transposed options listed here
- Fewer options for the untransposed

Transposed Line: ATP

- Can enter the valid fields:
  » Modal resistance per length
  » Modal L’C’ or
  » Modal Zc and v or
  » Modal Zc tau
Untranposed Line: ATP

• Can enter the valid fields:
  » Resistance/length
  » A, B for modes
  » Length
  » ILINE controls A,B
  » Transformation matrix

PI section models: EMTDC

• Choose PI sections from Master Library
**Coupled RL: EMTDC**

- Choose Mutually coupled wires from Master Library

**Distributed Parameter Line: EMTDC: Steps 1 and 2**

- Two interface options:
  - Step 1: Connect Interface Component into Circuit:
  - Step 2: Then copy in TLINE configuration component
    - Can be connect to interface components or
    - Directly connected
Distributed Parameter Line: EMTDC: Steps 3 and 4

- Step 3: Next choose Edit:
- Step 4: Copy Line Model and Options Box from Master Library:
  » In this case choose Bergeron (others later)

Distributed Parameter Line: EMTDC: Steps 5

- Step 5: Choose manual entry of X,Z
  
  Manual Entry of Y,Z
  +ve Sequence R: 6.6813e-7 [pu/m]
  +ve Sequence XL: 9.691e-6 [pu/m]
  +ve Sequence XC: 5.1468 [pu/m]
  0 Sequence R: 7.175e-6 [pu/m]
  0 Sequence XL: 2.51e-5 [pu/m]
  0 Sequence XC: 7.9365 [pu/m]
  
  Edit parameters:
Distributed Parameter Line: EMTDC: Steps 5-cont.

Line Models