ASSIGNMENT No. 8
Due Date: 29 March

Non-Linear Elements

The transmission line in Assignment No. 3 is now terminated in a nonlinear inductance. Adapt the program you wrote for that Assignment to the present case. To simplify the visualization of the results, for this assignment the breaker opens at \( t = 7.5 \) ms and \( t_{\text{max}} = 25 \) ms.

The nonlinear characteristic of the L is approximated with two line segments as follows

1. Use the simple two-slope model shown.
2. Assume zero initial conditions for both your program and MicroTran.
3. Plot the voltages at nodes ONE, TWO, THREE, FOUR, and the current \( i_m \).
4. Include in your report: a) The circuit diagram as modelled in MicroTran. b) Snapshots of the screens for data input for the nonlinear reactor. c) The discretized circuit and the corresponding equations. d) Your program code in the Appendix. e) The .dat and .out files in the Appendix.