ANALOG DEVICES

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Consensus Model Update

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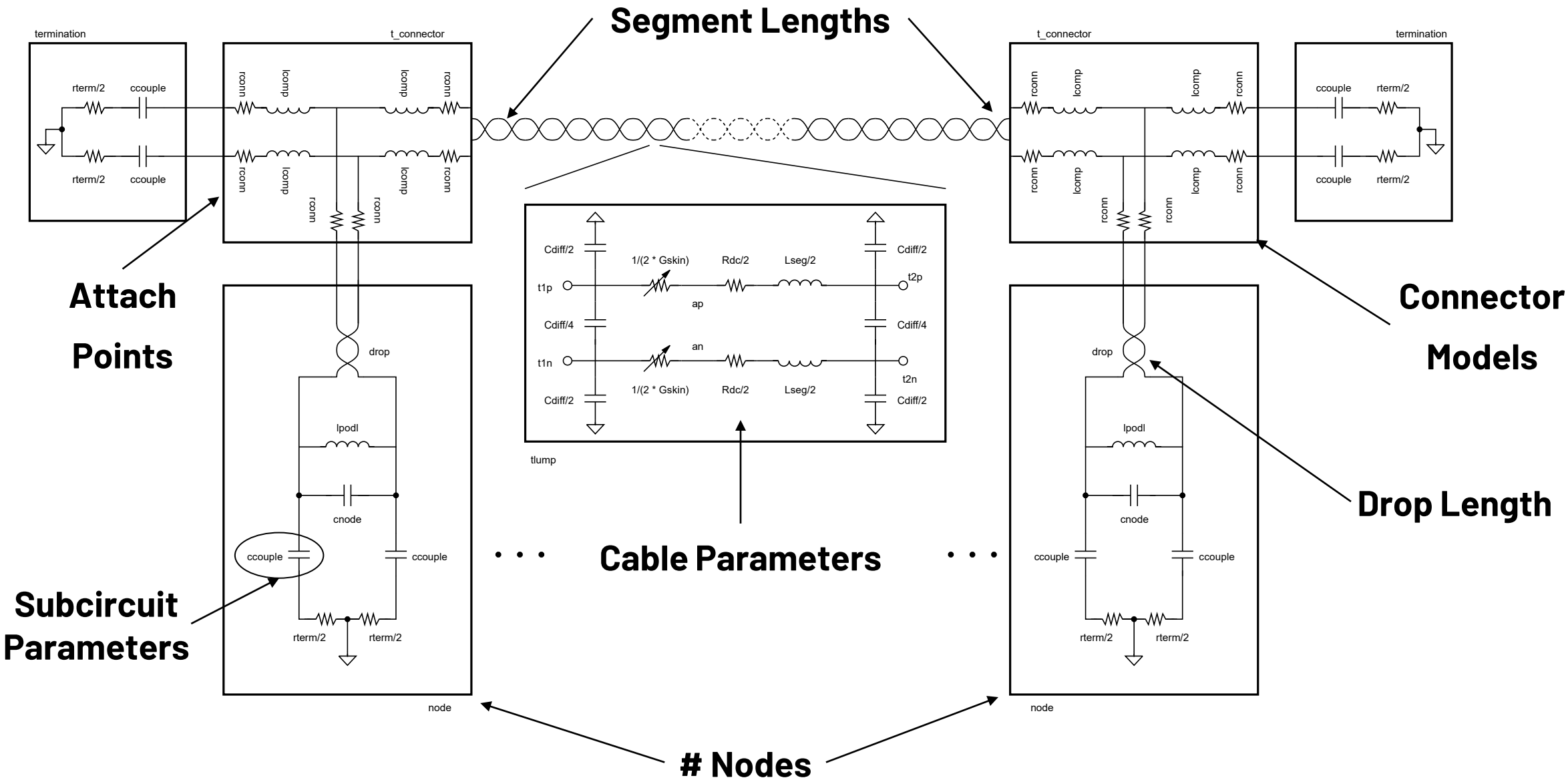
Multi-drop System : Algorithmic Model Assembly



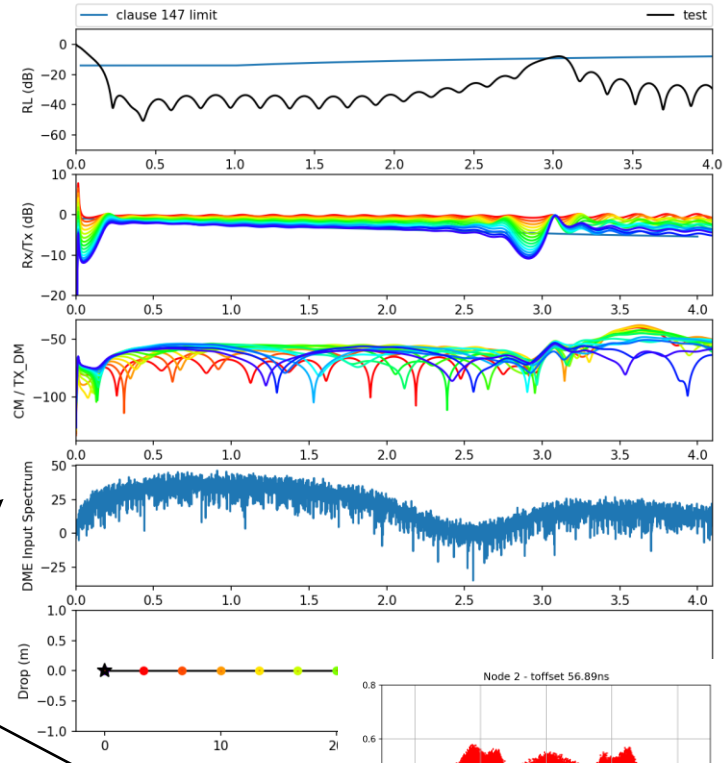
Consensus Model

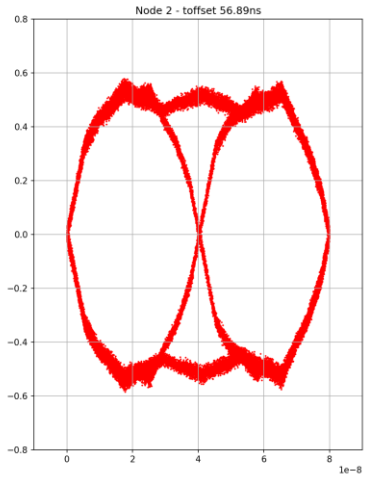
Configure System (.json)

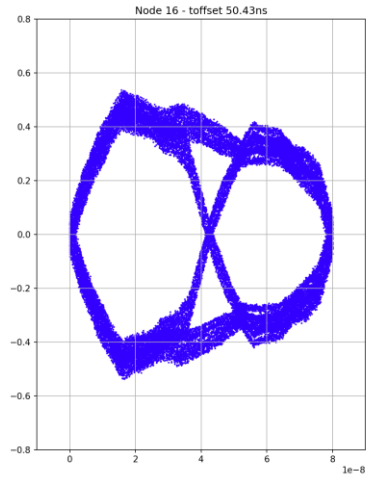
e.g. your_test.json

python cmodel.py –json=your_test.json

- Build netlist
- Run LTSpice
- Extract + Process Data

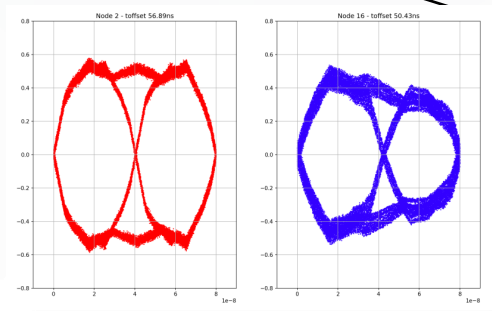


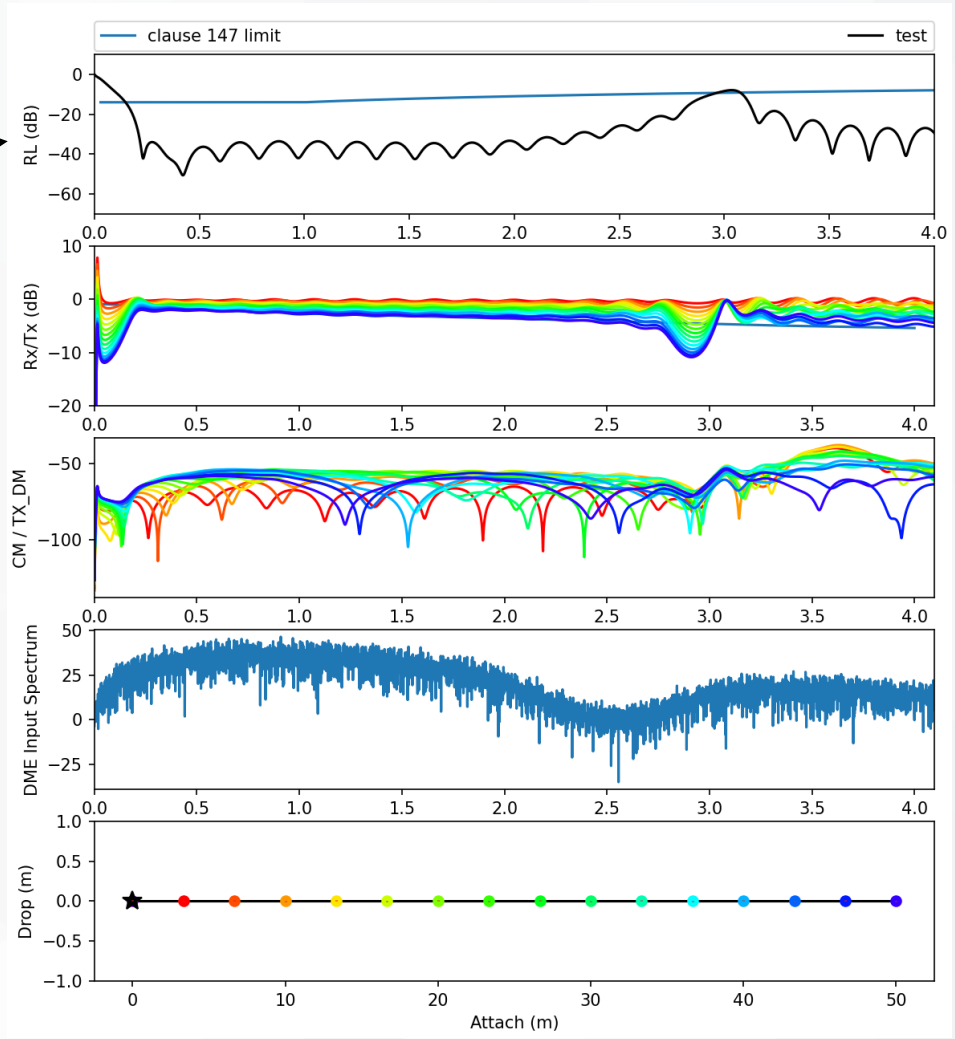




Model Outputs

- Return Loss
- Insertion Loss
- Common Mode Conversion
- Input Power Spectral Density
- Simple network model
- Eye Diagrams

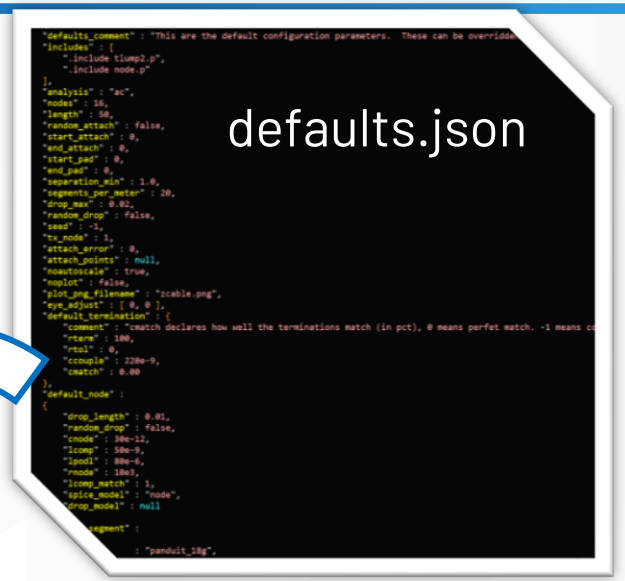




Default Configuration : defaults.json / description.json

- 'defaults.json' contains all default parameters needed to run the model
- 'description.json' has descriptions of each variable

Starting the model



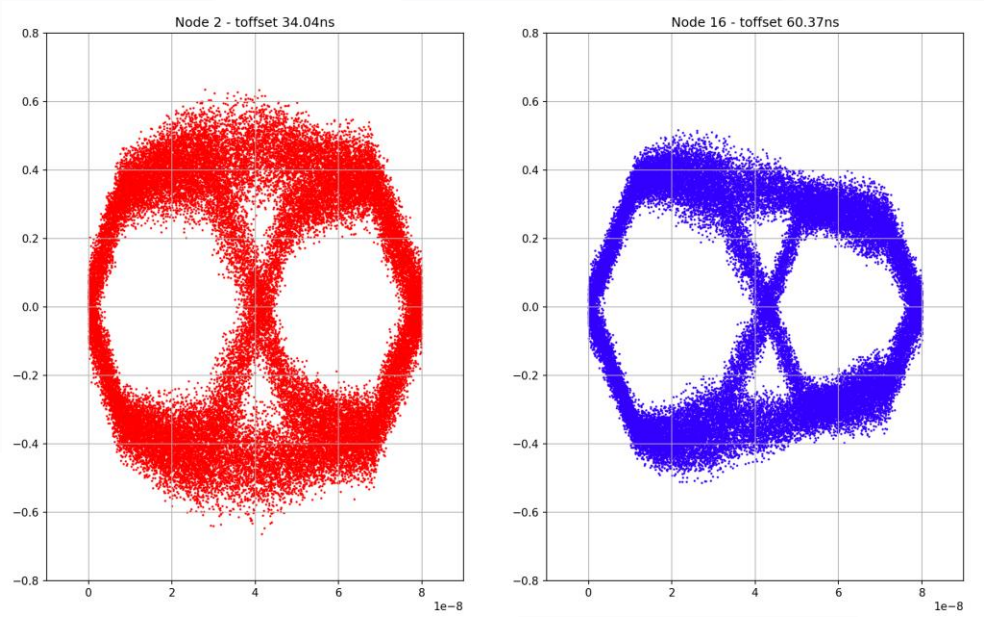
- Each model run outputs a file: **last_run.json**
- **last_run.json** contains an expanded description of the system
  - Fully instantiated cable segments and nodes. etc
- Edit last_run.json to make new experiments with heterogeneous cable segments and nodes
- Refer to description.json for help configuring parameters

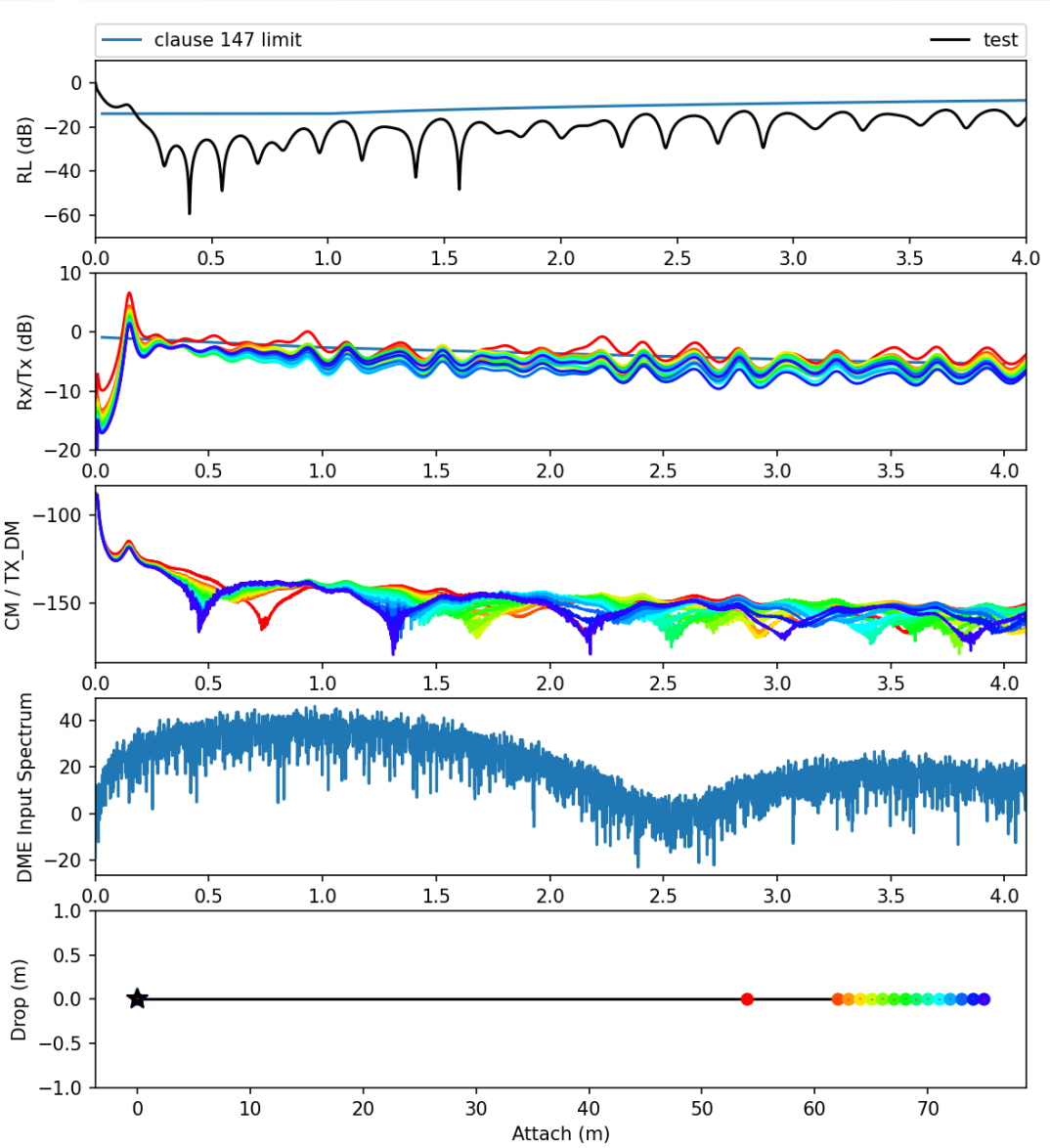
python cmodel.py –json=<your_config>.json

- Build netlist
- Run LTSpice
- Extract + Process Data

Limit Lines Need Adjustment

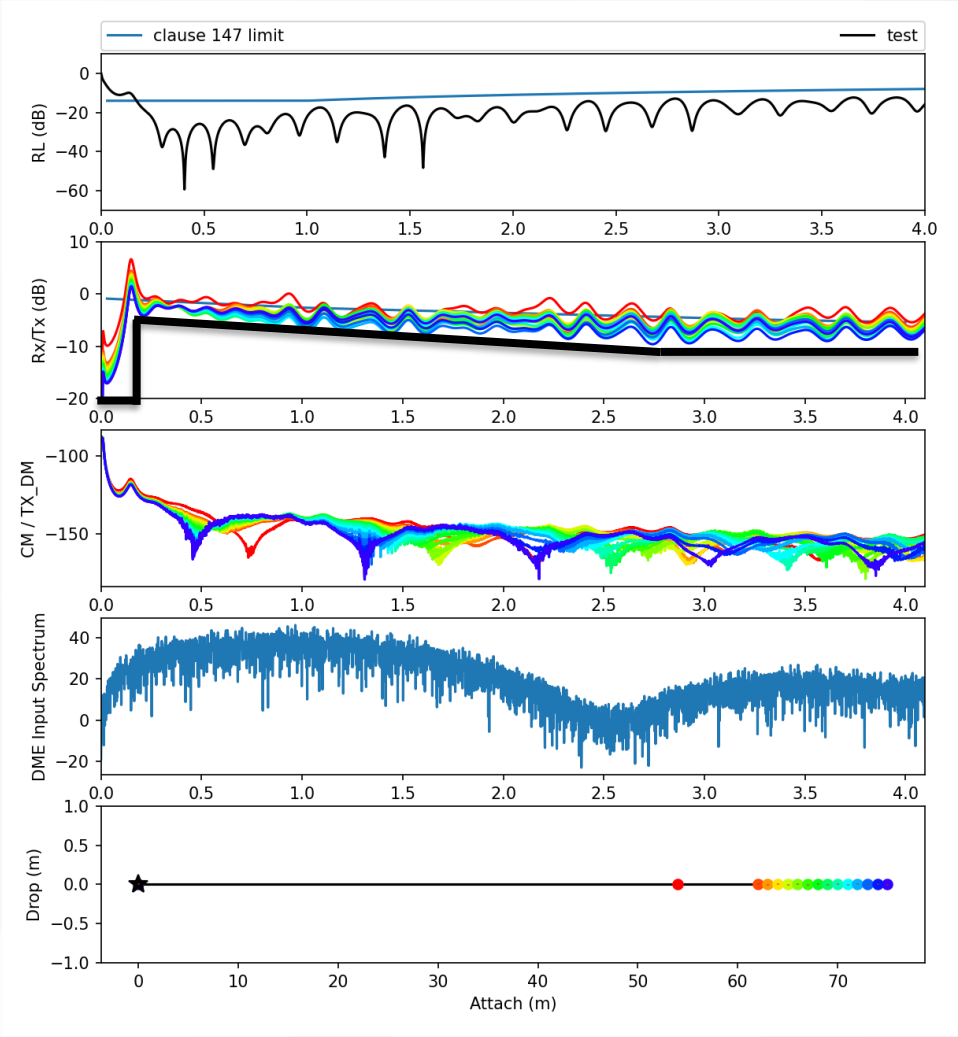
- Eyes are open but insertion loss exceeds limits
- Need to adjust RL limits
- What is minimum required eye opening?





Future Work

- Need to address RL / IL limit lines for standard to proceed
  - Automate multi-run data extraction
  - Form new limit lines based on data
    - Provide cutouts for power coupling inductance
  - Correlate new limit lines to eye openings



New IL Limit Line

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Thank You

GitHub Repository:
https://github.com/SPE-MD/SPMD-Simulations/ADI_Model/