Summary

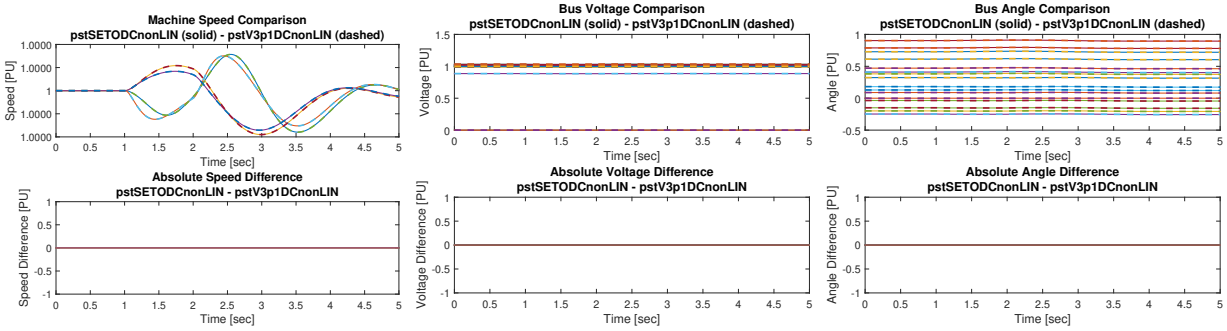
- A HVDC case has been created and tested as working in all versions of PST.
- Using the structured global approach increases speed by over 2 times.
- Minor differences exist between version 2.3 and 3.1 in non-linear simulation output.
- All linear results match between versions, but do not match non-linear output (possibly due to improper data handling).

Scenario Description

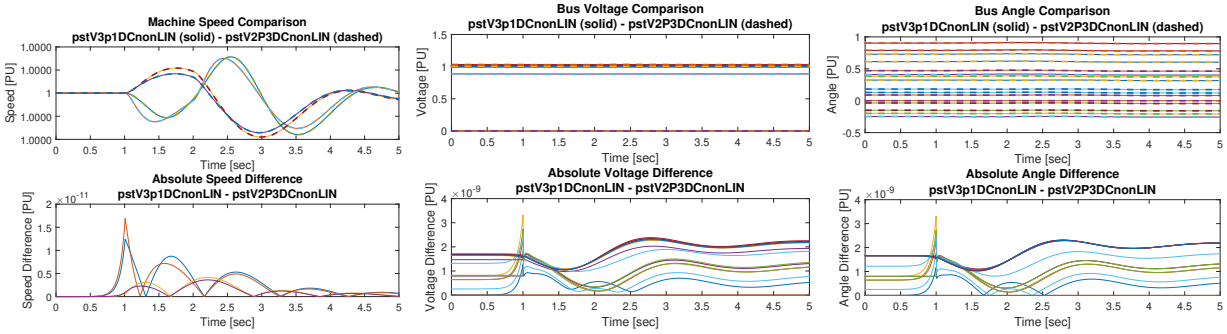
A 16 bus system with one HVDC link and four machines equipped with st3 exciters, pss, and governors was perturbed by a 0.1 PU active load pulse from $t = 1$ to $t = 2$

Non-Linear Results

The new pstSETO version is based on version 3.1 so it makes sense that there are no differences in machine speed or bus voltage and angle. However, total non-linear simulation time in 3.1 is 18.876 seconds, while pstSETO only takes 8.853 seconds.



The differences between version 3.1 and 2.3 range between 10^{-11} to 10^{-9}. Judging from the initial difference, there must have been changes to the way DC lines were initialized between version 2 and 3.



Linear Results

All versions provide the same output, however it does not match non-linear data. This is very possibly due to improper data handling.