

**Recent Progress:**

1. Newest Version of PST chosen
2. v2p3 work on global 'g' for lmod
3. RK2 (Heun's) routine explored
4. New Branch created for pwrmod addition attempt
5. GitHub updated:  
<https://github.com/thadhaines/MT-Tech-SET0>

**Current Tasks:**

1. Sandia Telecon action items...
2. Look at Trudnowski code for 'structured array, functionalized' approach.
3. Look at Stajcar code for basic transient stability simulation flow.
4. Work on understanding PST
5. Document findings of PST functionality
6. Investigate Octave compatibility
7. Create modulation case: ramp/noise
8. Continue to collect example cases
9. Continue to work on data plots

**Possible Future Tasks:**

1. Investigate Sandia integrator stability methods. See if the modified PST used by Sandia in 2015 paper exists for an example of how they implemented different integration routines / stability calculations.

**Coding Thoughts:**

1. Condense  $\approx 340$  globals into 1 structured array with  $\approx 18$  fields based on category that contain PST arrays used for vector calculations.
2. Enable 'objects' (structure of arrays), but include functions to interact with condensed globals so vectorized operations are still possible. This requires more conceptual modeling to understand what needs to be passed/references/changed for each 'object'.
3. Separate total system calculation of derivatives into scripts/functions to allow for easier changing of integration method. Possibly employ **feval** for a more dynamic calculation routine.
4. Rework how switching/perturbance events are handled into a more flexible and general format.
5. Generate something similar to unit test cases to verify code changes don't break everything during refactor.
6. Generate comparison scripts to verify simulated results match after code changes.

**Current Questions:**

1. Thoughts on Dan's notes for pwrmod/ivmmod
2. Minimum requirements for system case?
  - Load flow solver
  - Network solver
  - Machine models
  - Governor model
  - Exciter models
  - pwrmod models
  - ivmmod model
  - load modulation models
  - ...
3. PST modeling of transformers?
4. PST modeling of faults:  
Uses alternate Y matrices?  
Creates fault bus?