**Recent Progress:**

1. Global g,non-linear functionality added for:
   - g.k
   - g.vts
2. Refined AGC implementation.
   - Added conditional ACE
   - created algorithm block diagram
3. Updated AGC example documentation
4. Created `handleStDx` function
5. Created `s_simu_BatchTestF` - a more functionalized simulation script
6. Created `s_simu_BatchVTS` - a more variable time step script
7. Updated pst SETO change doc
8. GitHub updated: `https://github.com/thadhaines/MT-Tech-SETO`

**Sandia Action Items:**

- Continue development of pwrmod / ivmmod models and their implementation in PST.
- Decide on PST base version (3.1⟶SETO)
- Plan for variable time step methods

**Current Questions:**

1. Induction machines have no speed? only angle?
2. PST modeling of transformers?
3. Play in data for variable solar irradiance? (Slow Sine with step events for cloud cover.)
4. PSS design doesn't seem to be used in normal simulation?
5. Deadlines of any sort?
6. Continued employment beyond August 12th?

**Current Tasks:**

1. Think about using standard ODE solvers
2. Requirements for variable step methods:
   - Functionalized Network solution
   - Functionalized Derivative calculation
   - Functionalized collection and return of calculated derivatives
   - 'outputfunction' that handles logging of correct output values and indexing
   - updated scheduler to run simulation in 'blocks' between known events.
3. Decisions concerning remaining globals:
   - IVM (waiting for linear code)
   - PWR (only cell data not global)
4. Update pstSETO flowchart of `s_simu_Batch`
5. Work on understanding PST operation
6. Document findings of PST functionality
7. Investigate Octave compatibility

**Coding Thoughts:**

1. Condense ≈340 globals into 1 structured array with ≈18 fields based on category.
2. Create new `s_simu_Batch` style script that functionalizes the newtork and dynamic calculations so that standard MATLAB ODE solvers may be used.
3. Rework how switching & perturbance events are handled into a more flexible and general format. (flags? objects?)
4. Generate something similar to unit test cases to verify code changes don't break everything during refactor.
5. Generate comparison scripts to verify simulated results match after code changes.

**Loose ends:**

1. `tgh` model not converted for use with global g. (no examples of tgh gov could be found)
2. In original `s_simu_Batch`, the global `tap` value associated with HVDC is over-written with a value used to compute line current multiple times.
3. Constant Power or Current loads seem to require a portion of constant Impedance...?
4. PSS design functionality not explored
5. No examples of user defined damping controls for SVC of TCSC models
6. No examples of delta P omega filter model
7. Differences in `mac_ind` between pst 2 and 3. Seem backward compatible - untested.
8. A tripped generators inertia should be removed from total inertia calculations of average frequency used in the AGC model.