Legend:
Functions
Structures
Substructs
Subsubstruct
Subsubsubstruct
(Re-Defining as)

runBWcompSim

This is a detailed flow chart of Gage R. and Justus B. compositional flow simulator.

BWinputData

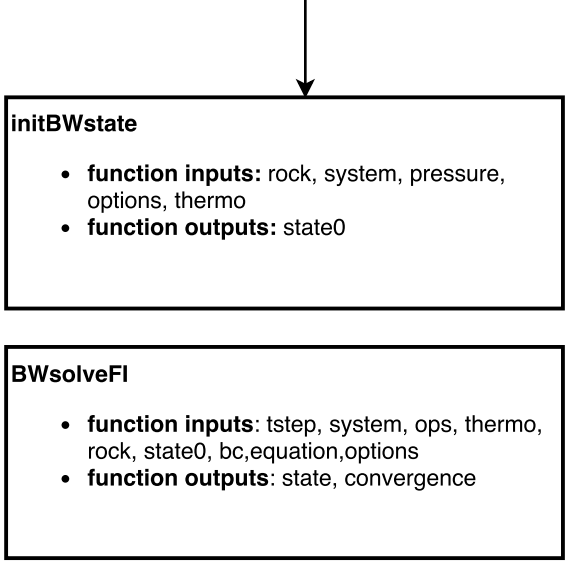
- **function inputs**: none
- **function outputs**:
  - **G**
  - **rock-**perm, porosity, pore volume, transmissiblity, G
  - **options-** covergence, trivial, RRiteration, and max outer loop tolerances
  - **thermo-** vp water, handle to PREOS, phase, fugacity switch, mixing rule
  - **influxfluid-**components, n, Zi, pressure, temp,call
  - **outfluxfluid-** components, n, Zi, pressure, temp,call
  - **initialfluid-**components, n, Zi, pressure, temp, call
  - **nonlinear-**max iterations, nonlinear, cellwise
  - **system-**R,temp,vp,fluid,Ncomp,compressibilty, p_ref, mv of water, nonlinear, cellwise, dt, total time, steps, t
  - influx_p, outflux_p, influx_rate

setupBWcontrols

- **function inputs**:rock, outfluxFluid, influxFluid, influx_rate, thermo, options, system
- **subfunction(s)**:
  - **GI_flash**:
    - **function inputs:bc.dirichlet**.fluid,**thermo**,**options**
    - **function outputs:**success_flag,stability_flag,Xiv,Xil,Zgas_vap, Zgas_liq, vapor_frac,cubic_time
- **function outputs:**
  - **bc**
    - **dirichlet-**faces,pressure,fluid(this gets re-defined),Xif,Xio,SoSg,Sw,V,Zi,Eo,Eg,F,Ew
    - **in-**influx_cells,fluid,pressure,Zi,Eg,Eo,C_influx (per component),T_influx,water_influx

setupBWsystem (not finished)

- **function inputs**:
  - **rock:**
    - **G:**
      - **cells:faces(cf),num(nc)**
      - **faces:num**
    - **T (T)**
  - **bc**
- **subfunction(s):**
  - **BWdivOp**
    - **function inputs:**
    - **function outputs:**
  - **BWgrad**
    - **function inputs:**
    - **function outputs:**
  - **BWfaceConcentrations**
    - **function inputs:**
    - **function outputs:**
- **function outputs**: **ops**


initBWstate
function inputs: rock, system, pressure, options, thermo
function outputs: state0
BWsolveFI
function inputs: tstep, system, ops, thermo, rock, state0, bc,equation,options
function outputs: state, convergence