Legend
Functions
Structures
Substructs

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

- **function inputs**: **rock, bc**
- **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