

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**- coverage, 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:** timestep, system, ops, thermo, rock, state0, bc,equation,options
- **function outputs:** state, convergence