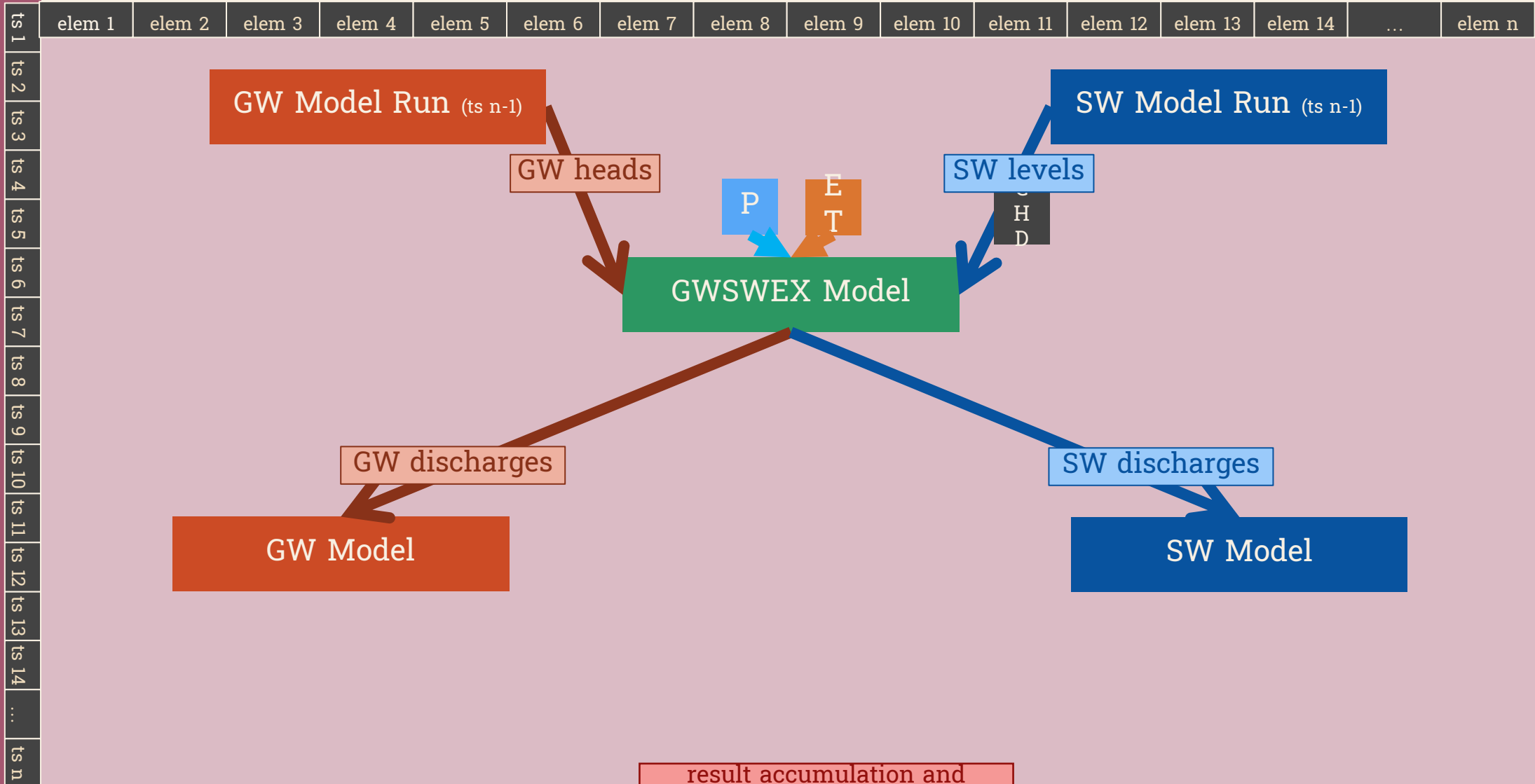


Global Simulation Period

timing
control

ts 1	ts 2	ts 3	ts 4	ts 5	ts 6	ts 7	ts 8	ts 9	ts 10	ts 11	ts 12	ts 13	ts 14	...	ts n
------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-----	------

Local
Simulation
Period



Global Simulation Period

timing
control

ts 1	ts 2	ts 3	ts 4	ts 5	ts 6	ts 7	ts 8	ts 9	ts 10	ts 11	ts 12	ts 13	ts 14	...	ts n
------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-----	------

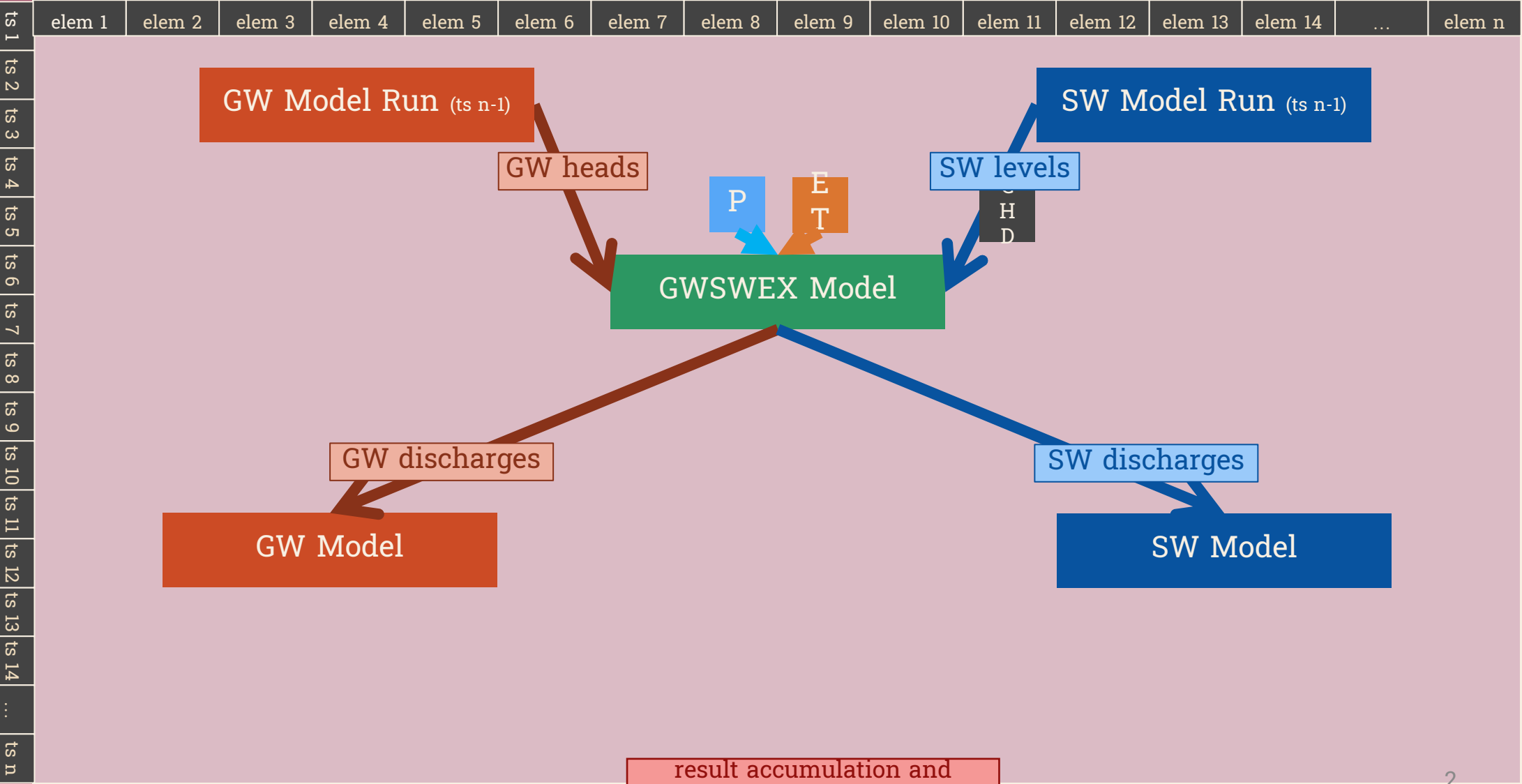
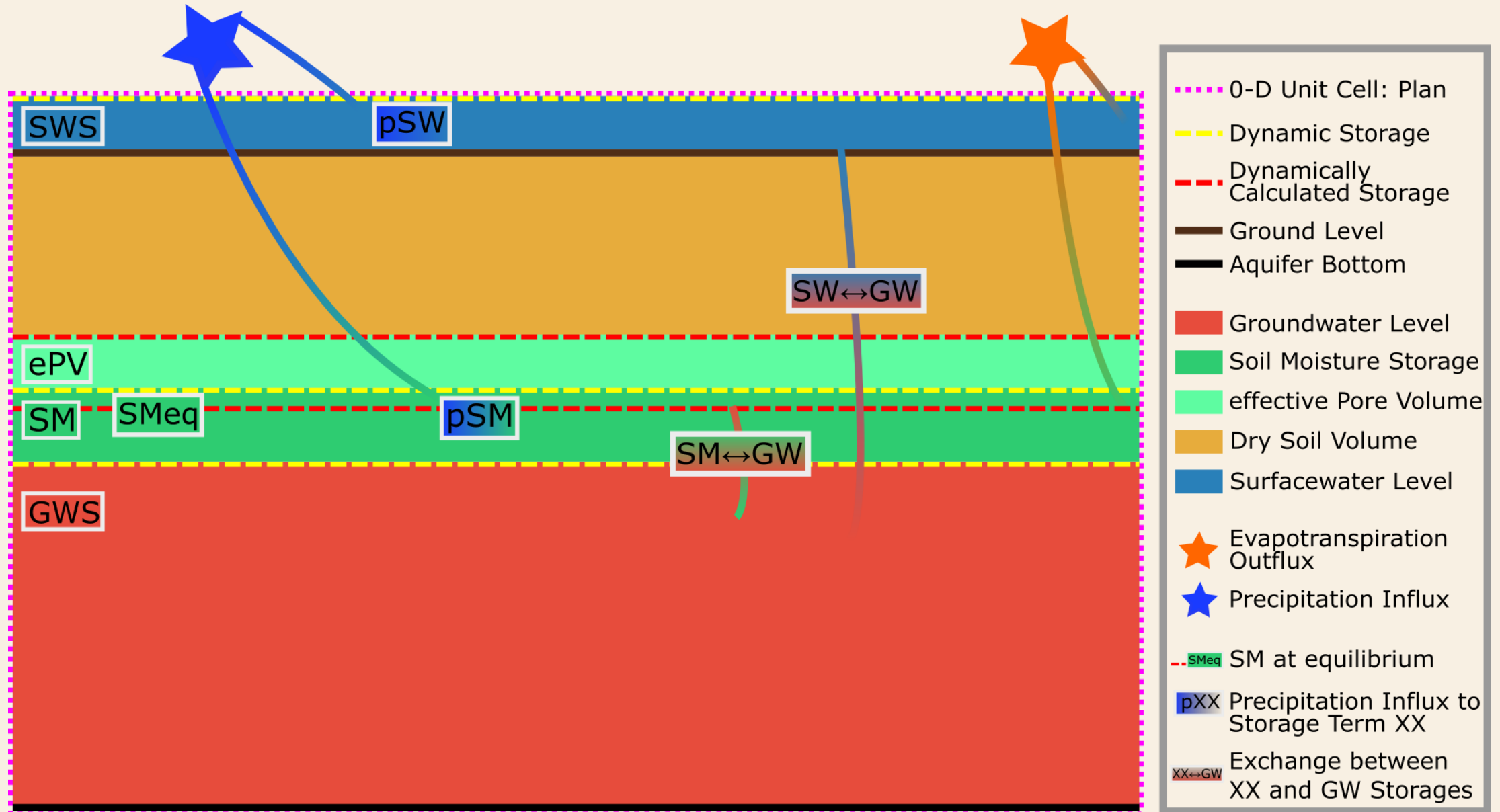
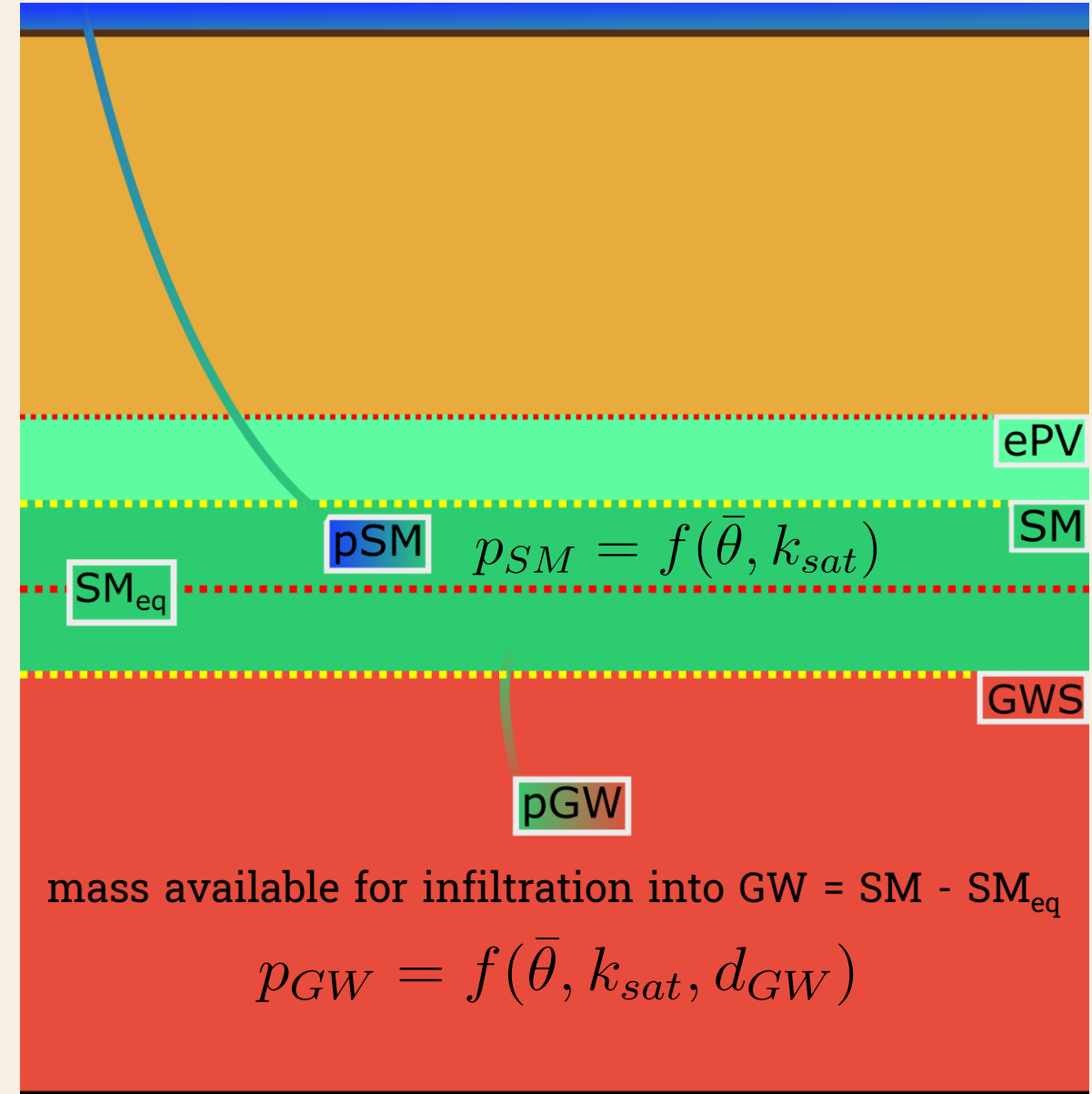
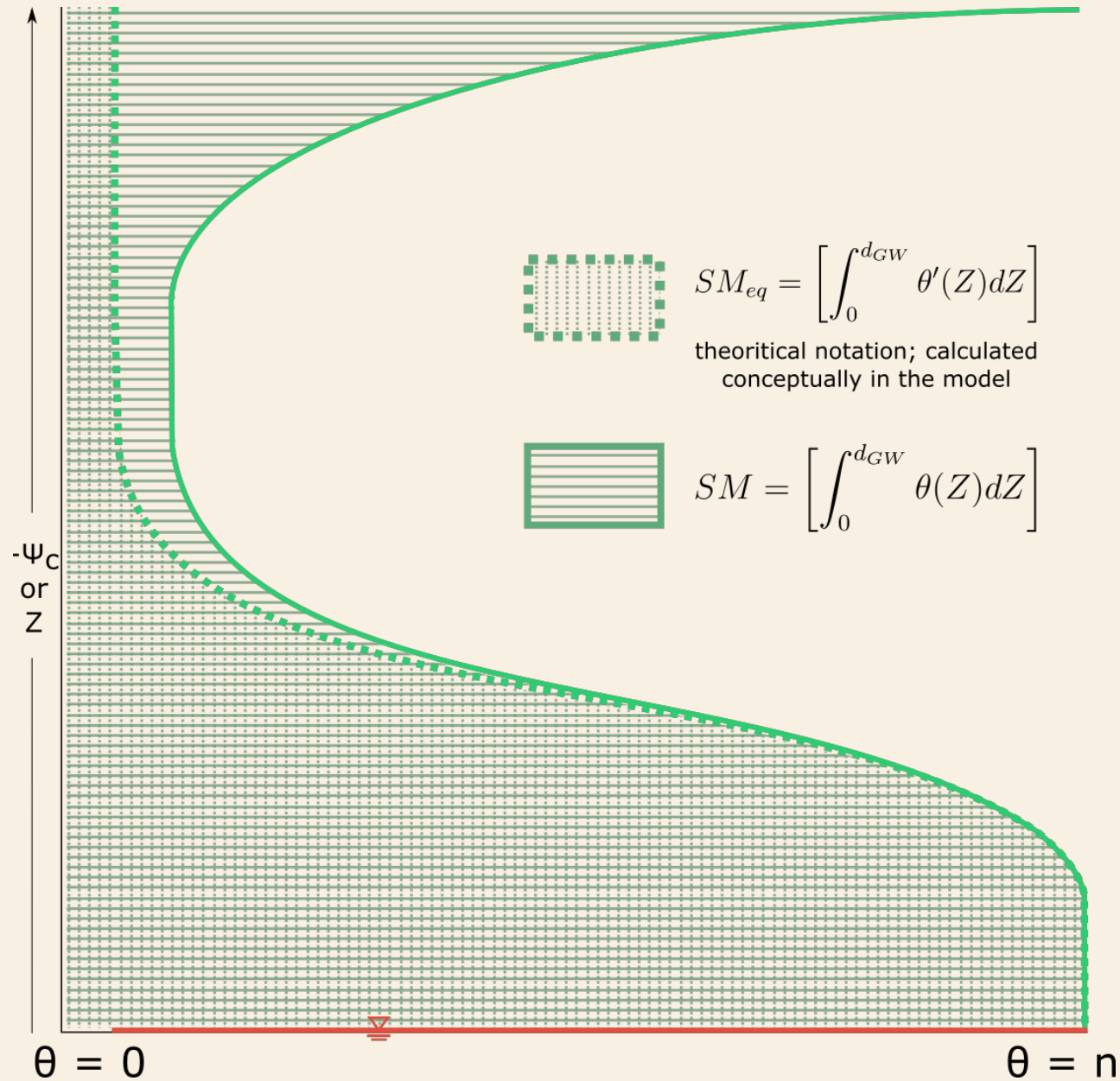


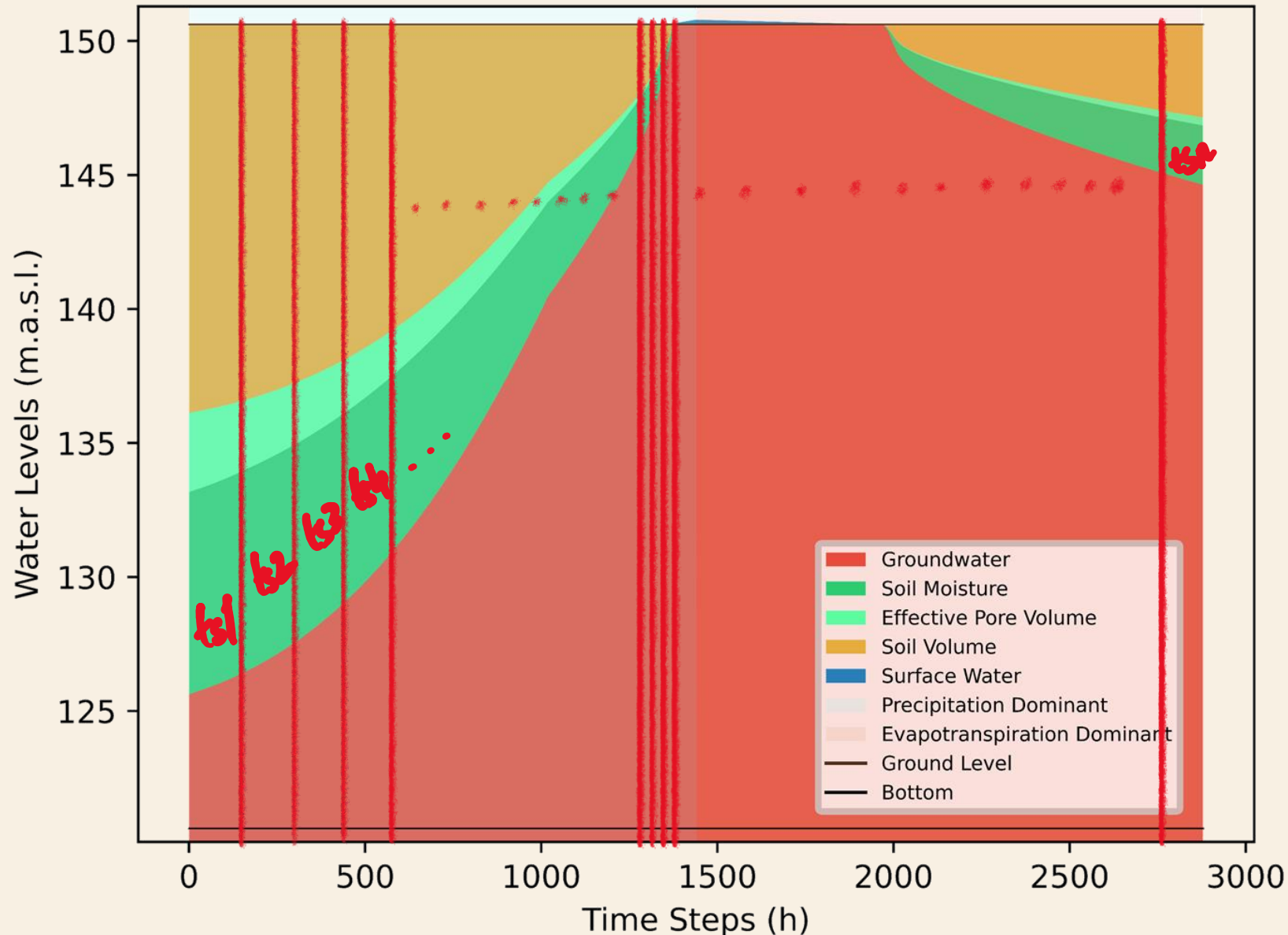
Illustration of the exchange processes per model element: GWSWEX



Model Physics: conceptualizing the Van Genuchten^[10] – Mualem Model^[11]



Model Behaviour: Sample model element



- Buildable as a standalone Fortran 90 program or as a python importable Fortran module (f2py)
- Average **execution time*** for a model with *10,000 model elements*, and *3,000 time-steps* is **~14 min**
- Average **execution time*** for a model with *50,000 model elements*, and *5 time-steps* is **~19 s**
- * Ryzen 7 3700X, 32GB RAM

