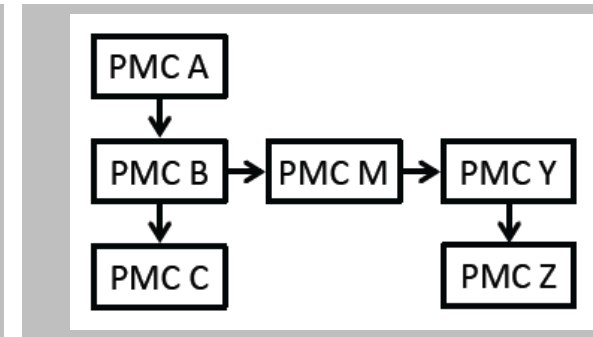
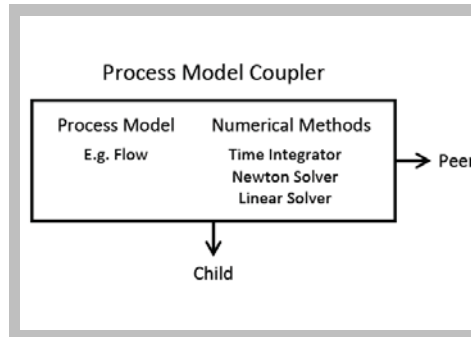
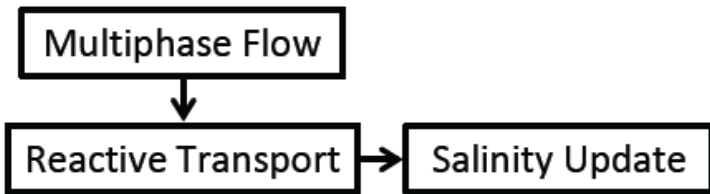


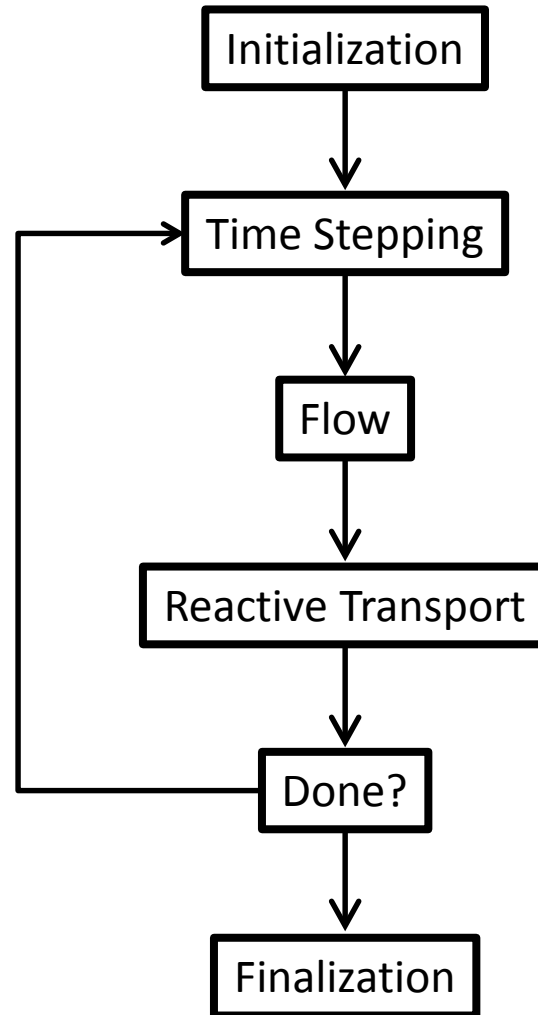
Exceptional service in the national interest



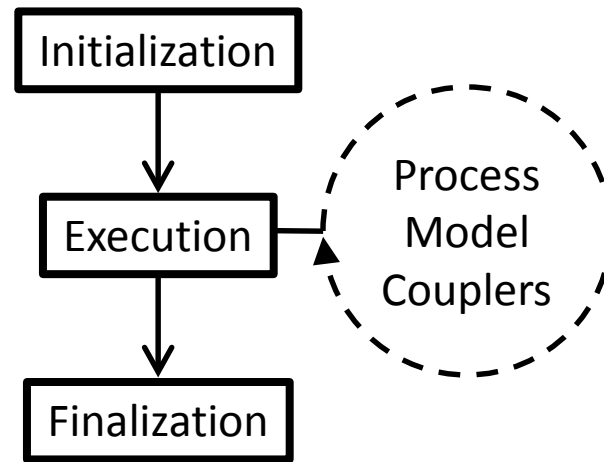
PFLOTRAN Process Model Coupling

Traditional Process Model Coupling

Traditional Time
Stepping Loop

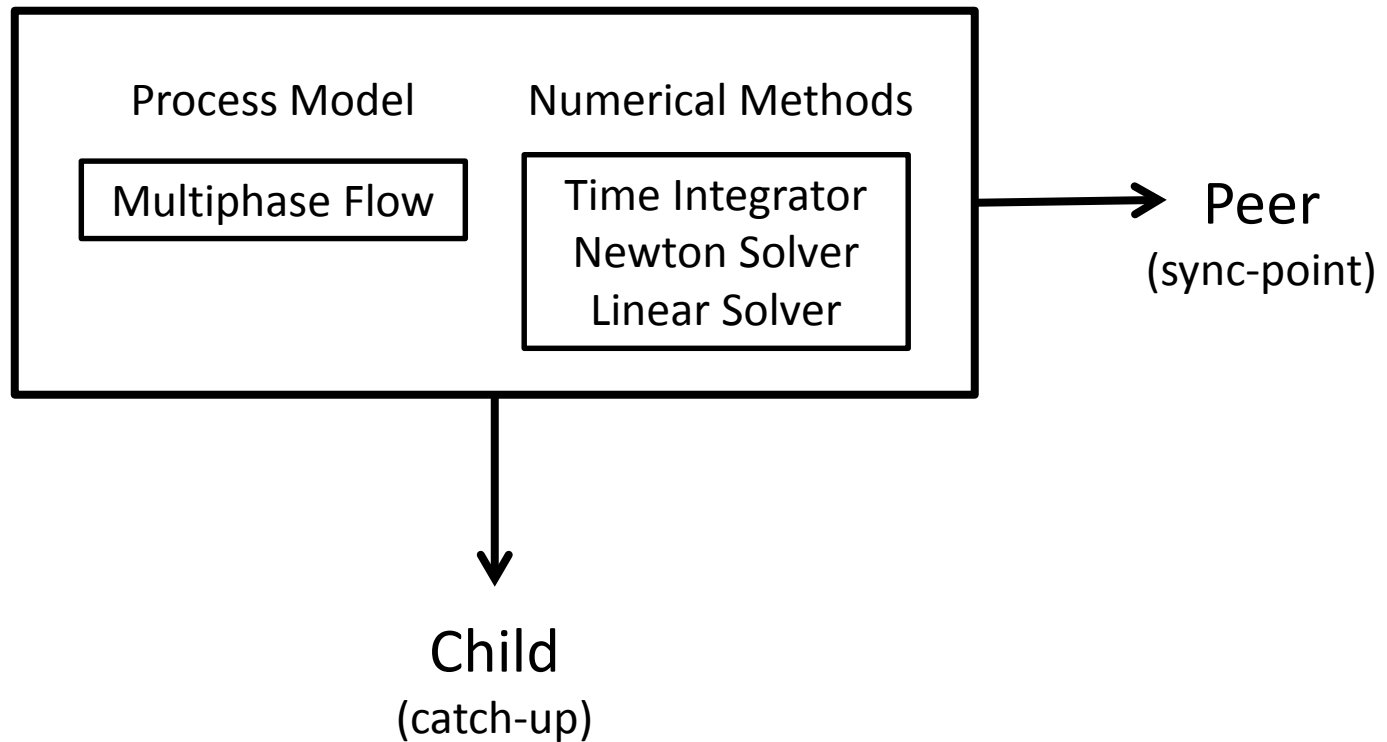


PFLOTRAN Workflow



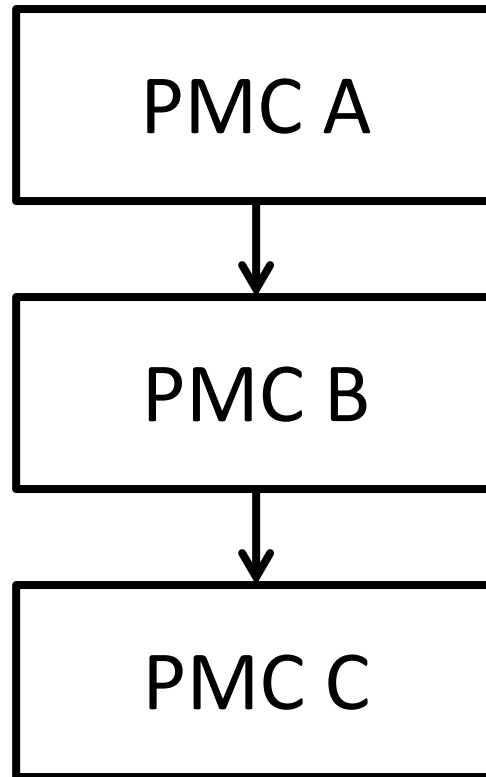
Process Model Coupling

Process Model Coupler



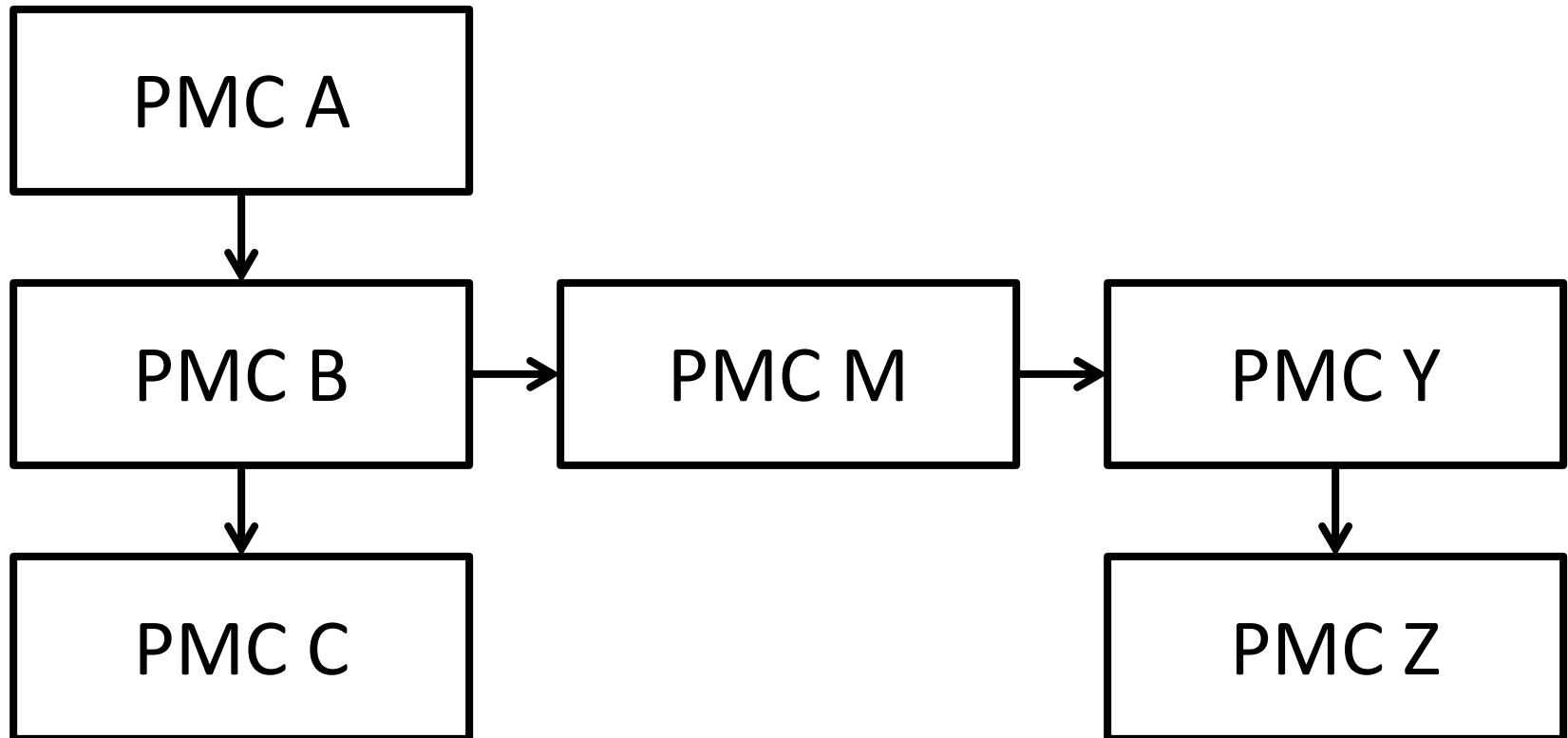
Hypothetical PMC Coupling

PMC = Process Model Coupler

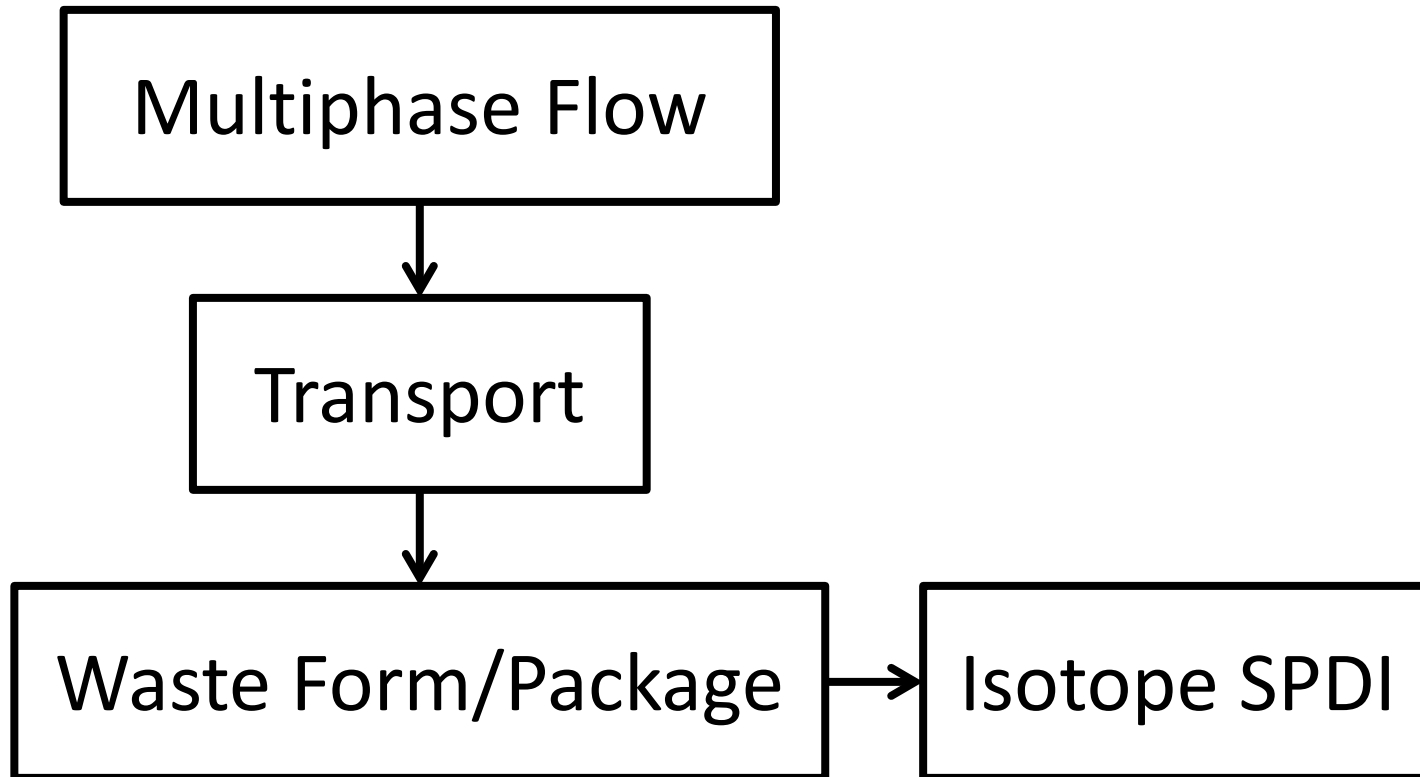


Hypothetical PMC Coupling

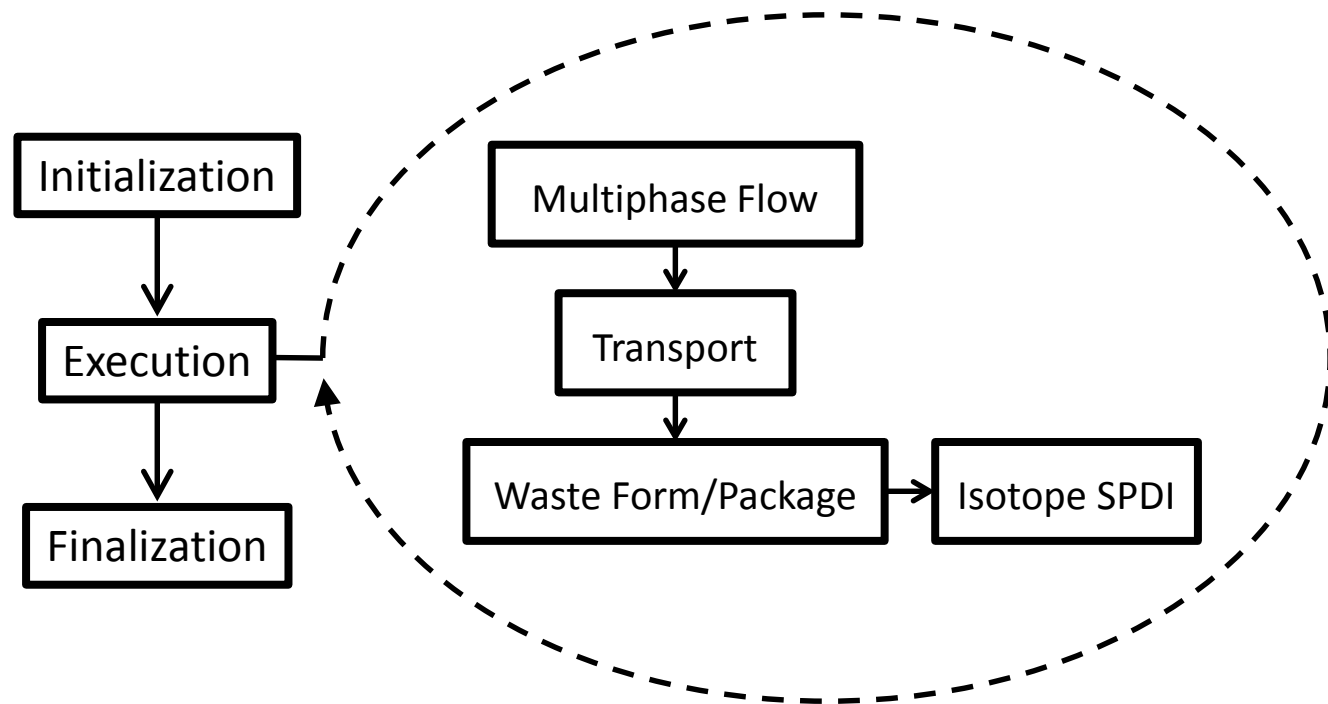
PMC = Process Model Coupler



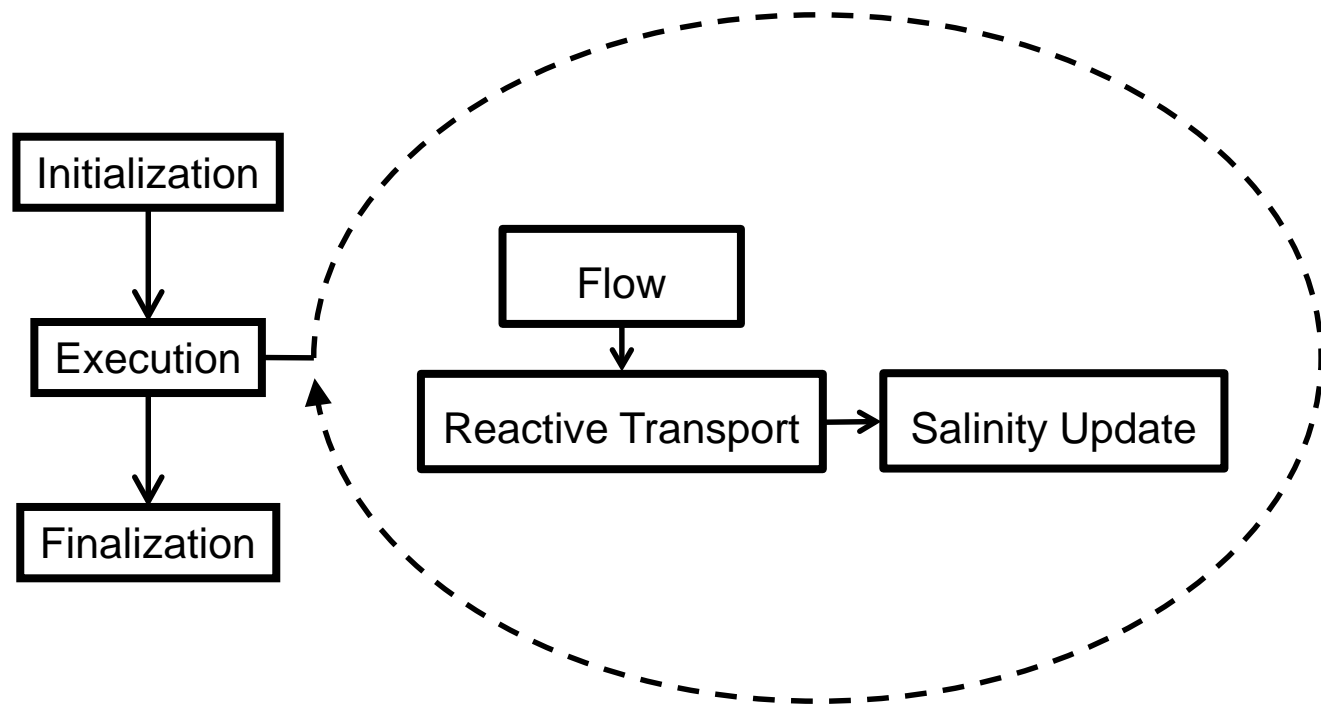
Radioactive Waste Process Models



PFLOTRAN Radioactive Waste Workflow Sandia National Laboratories



PFLOTRAN Salinity-Dependent Density Workflow



Flexible Process Model Coupling

- Benefits
 - Customizable linkage between process models, e.g.
 - Flow
 - Transport
 - Reaction
 - Updates to material properties at select times
 - Flexible time stepping
 - Individual processes may run at their own time scale.
 - Modularity for incorporating new process models
 - Time stepping loops for existing process models are not impacted.