

Appendix D

Numerical Stability Plots

D1 Plots

Figure 65 presents the convergence plot of the model for the Q100 event. It can be seen from the plot that the 1D model is convergent within the recommended tolerances for full duration of the simulation.

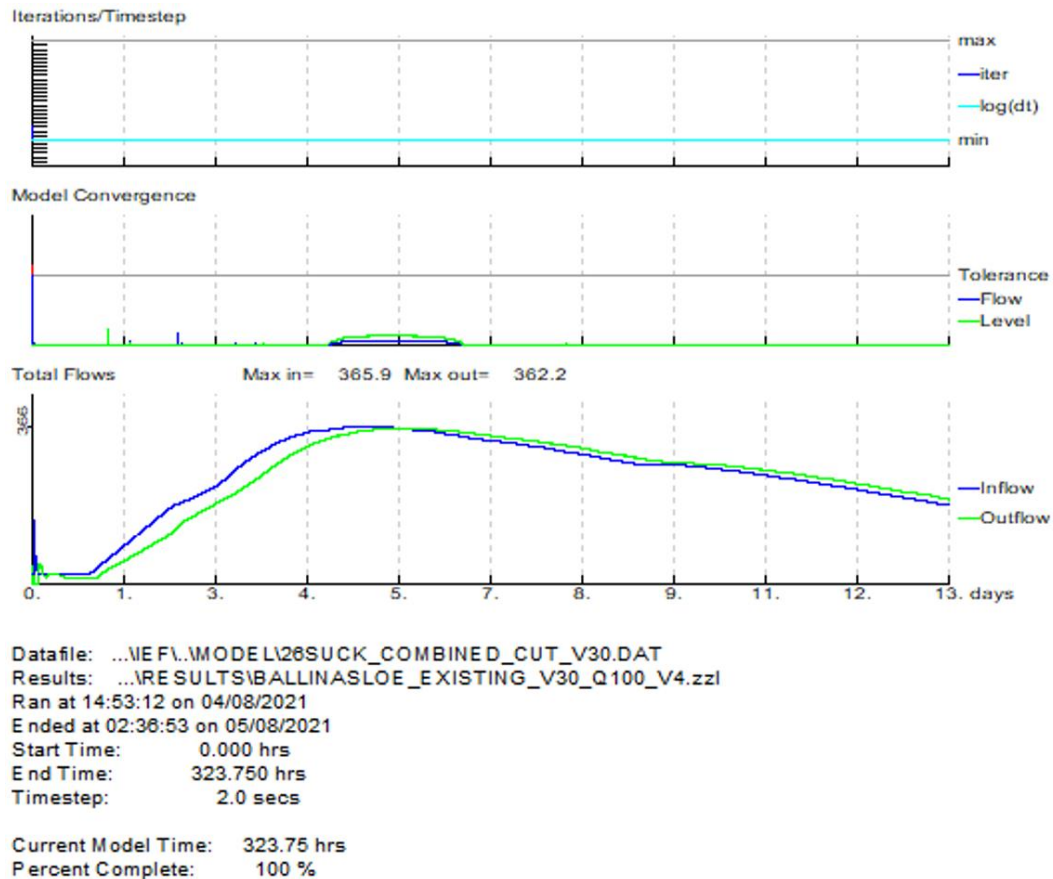


Figure 65: Convergence plot for the Q100 event

Figure 66 presents the mass balance percentage error plot for the Q100 fluvially dominant simulation run. This is calculated as the error in the volume divided by the total volume passing through the system at each timestep. The industry standard recommended tolerance for this key parameter is 1%.

It can be seen from the plot that the mass balance of the model is well below the recommended tolerance for the full duration of the simulation run.

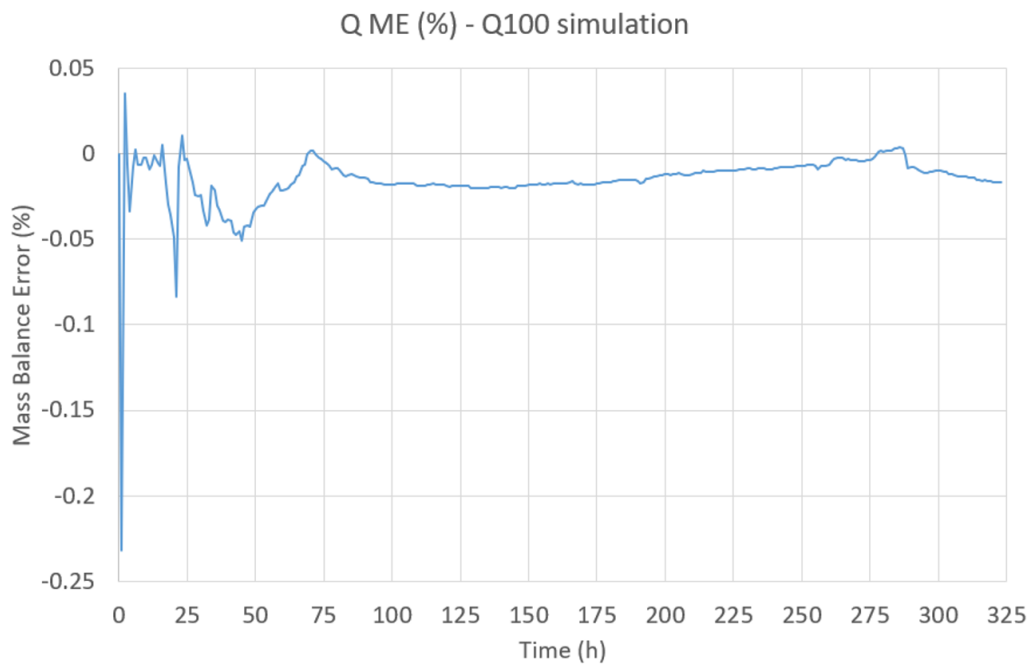


Figure 66: Mass balance plot

It is evident from both the convergence and mass balance plots that the model is stable and operating within in the accepted accuracy for numerical tolerances.