Storage and Link Water Quality Processes - SRG

Water quality processes are modelled in links and for node types which have storage associated with them (see Nodes - SRG). Most node types have no storage and at these the mass balance of each water quality constituent being modelled is maintained with no decay or deposition processes.

Routing Models

Two approaches are provided for routing constituent movement through a reach. The first approach assumes the constituent is fully mixed within a reach. This approach can be appropriate where the user is interested in monthly or annual loads. A particle tracking method that is also provided routes the constituent at the velocity of flow (Close, 1996). This method is more accurate and is suitable where the user is interested in concentrations or loads at smaller scales.

More information on these methods is available via Constituent Routing - SRG.

Processing Models

Constituent processing models represent water quality modification process in links and storages, and act in a manner similar to constituent filtering models in catchments. Two types of constituent processing models are currently available in Source:

- A decay model (see Constituent Processing Models SRG) and,
- In links only, modelling of surface water-groundwater exchange fluxes (see Flux SRG).

The above material has been sourced from Welsh *et al.* (2013) with adaptations to suit the needs of the SRG.

References

Welsh, W.D., Vaze, J., Dutta, D., Rassam, D., Rahman, J.M., Jolly, I.D., Wallbrink, P., Podger, G.M., Bethune, M., Hardy, M.J., Teng, J., Lerat, J. (2013) An integrated modelling framework for regulated river systems. *Environmental Modelling & Software*, **39**: 81-102.

Close, A. (1996) A new daily model of flow and solute transport in the River Murray. 23rd Hydrology and Water Resources Symposium, Hobart, Australia, 21-24 May 1996, 173-178.