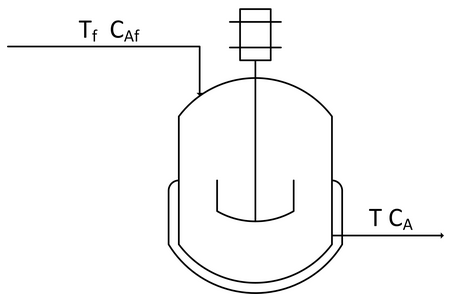
<http://apmonitor.com/pdc/index.php/Main/TankBlending>



Create a dynamic model of concentration and temperature based on a physics-based derivation from species and energy balance equations. A mixing tank has a liquid inlet stream and outlet stream. The tank is well mixed so the concentration and temperature are assumed to be the same throughout the reactor.

Start with the [species and energy balance equations](http://apmonitor.com/pdc/index.php/Main/PhysicsBasedModels) and derive the dynamic concentration and temperature response. Develop the concentration response and then add the temperature response. Assume a constant volume V of 100 m3 and an inlet flow rate or q of 100 m3/hr.

**Species balance**

**Energy Balance**