

Rate of temperature change ( $T'$ )  
is losses ( $-fT$ )  
plus a heating term

$$T' = -f \cdot T + h$$

Liquid

$T > 100$   
instantaneous!  
phase=1

Boils.  
Liquid  $\rightarrow$  Steam  
phase transition

Condenses.  
Steam  $\rightarrow$  liquid  
phase transition

$T < 100$   
instantaneous!  
phase=0

Steam

$$T' = -f \cdot T + h/2$$

Rate of temperature  $T'$   
is losses ( $-fT$ )  
plus a heating term ( $h/2$ )  
  
(not a real model of steam  
just to differentiate from liquid)