2.20 Isobaric heat capacity

The specific isobaric heat capacity c_p is the rate of change of specific enthalpy with temperature at constant Absolute Salinity S_A and pressure p, so that

$$c_p = c_p\left(S_A, t, p\right) = \left.\frac{\partial h}{\partial T}\right|_{S_A, p} = -\left(T_0 + t\right) g_{TT} \,. \tag{2.20.1}$$

The isobaric heat capacity c_p varies over the $S_A - \Theta$ plane at $p = 0$ by approximately 5%, as illustrated in Figure 4.

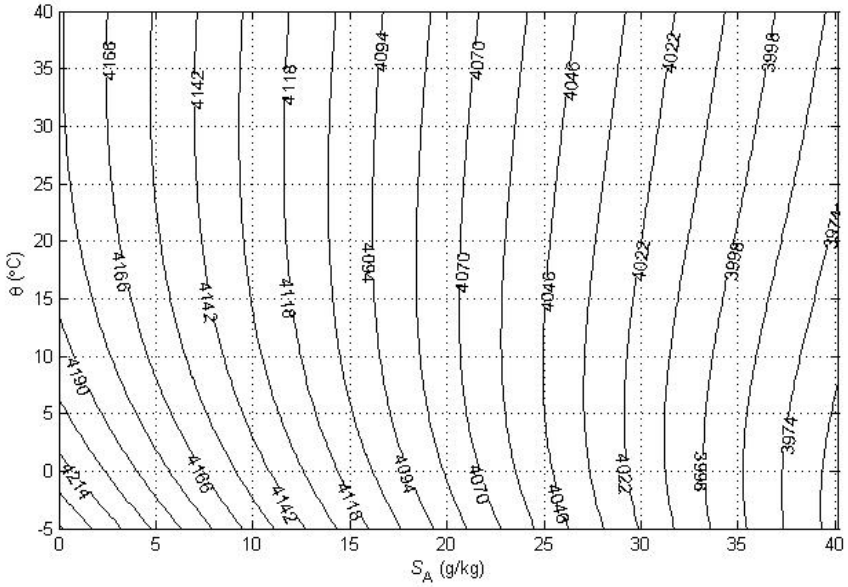

Figure 4. Contours of isobaric specific heat capacity c_p of seawater (in J kg^{-1} K^{-1}), Eqn. (2.20.1), at $p = 0$.

The isobaric heat capacity c_p has units of J kg^{-1} K^{-1} in both the SIA and GSW computer libraries.