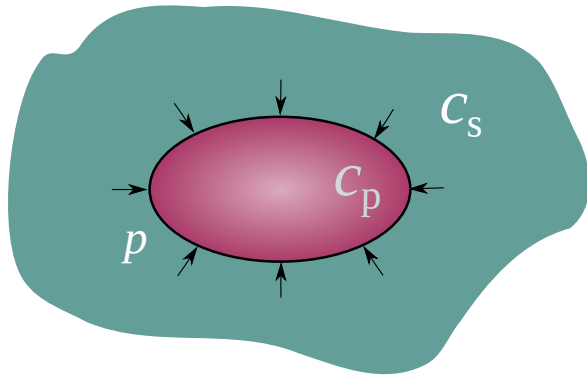


Mean field analytical model. Equation of state.

$$F(c_p, c_s) = F_{\text{conf}}(c_p) + F_{\text{int}}(c_p, \chi) + F_{\text{ion}}(c_p, c_s) + F_{\alpha}(c_p, c_s, pK)$$

pK and χ are the parameters of the model



Partial pressure of the gel network

$$\left. \frac{\partial F}{\partial V} \right|_{c_s} = -p$$

Figure 4: Gel particle under compression in equilibrium with aqueous solution of salinity c_s