Mean field model of hydrophobic weak polyelectrolyte gel.

- The gel is **regular network.** big enogh to treat it is homogeneous medium
- Affine deformation approximation $R \sim V^{1/3}$
- weak hydrophobic polyacid, pK = 6, chi = 2.0

Ionization equilibrium

figures/grand_reaction_model_noCa.png

$$pA^- + H_3O^+ \leftrightarrows pAH$$

Rud, O., Borisov, O., Kosovan, P. (2018).
Thermodynamic model for a reversible desalination cycle

using weak polyelectrolyte hydrogels. Desalination, 442, 32–43.