Equations

https://camillejr.github.io/science-docs/

1 PC-transport

$$\rho \frac{D\phi}{Dt} = \mathbb{D}\nabla^2\phi + S_{\phi} \qquad \qquad \rho \frac{\partial \mathbf{z}}{\partial t} + \rho \vec{\mathbf{V}} \cdot \nabla \mathbf{z} = \nabla \rho \mathbb{D}_z \nabla \mathbf{z} + \mathbf{S}_z$$

$$S_{\phi}(\phi) = f(T, p, Y_1, \dots, Y_{N_S-1}) \qquad \rho \frac{\partial \mathbf{\Phi}}{\partial t} + \rho \vec{\mathbf{V}} \cdot \nabla \mathbf{\Phi} = \nabla \rho \mathbb{D}_{\Phi} \nabla \mathbf{\Phi} + \mathbf{S}_{\Phi}$$

$$horac{Doldsymbol{\Phi}}{Dt}=-
abla(oldsymbol{j_\Phi})+oldsymbol{s_\Phi}$$
 2 Regression $oldsymbol{\Phi}=[T,p,]$ $horac{Doldsymbol{z}}{Dt}=-
abla(oldsymbol{j_z})+oldsymbol{s_z}$ $oldsymbol{\Phi}pprox f_\Phi(oldsymbol{Z_g})$

$$\rho \frac{\partial \mathbf{\Phi}}{\partial t} + \rho \vec{\mathbf{V}} \cdot \nabla \mathbf{\Phi} = \nabla \rho \mathbb{D}_{\Phi} \nabla \mathbf{\Phi} + \mathbf{S}_{\Phi}$$

$$\mathbf{\Phi} \approx N(0, \sigma_n^2)$$

$$\rho \frac{\partial \mathbf{z}}{\partial t} + \rho \vec{\mathbf{V}} \cdot \nabla \mathbf{z} = \nabla \rho \mathbb{D}_{\mathbf{z}} \nabla \mathbf{z} + \mathbf{S}_{\mathbf{z}} \quad \mathbf{\Phi} \approx N(0, \mathbf{K}(\mathbf{Z}_p, \mathbf{Z}_q) + \sigma_n^2 \mathbf{I})$$

$$\mathbf{z} = \mathbf{\Phi} \mathbf{A}_{\mathbf{q}} \qquad \qquad y_e = y_m(x) + \delta + \epsilon$$

$$k(x_i,x_j)=h^2\exp(rac{-(x_i-x_j)^2}{\lambda^2})$$
 3 Arrhenius law $k=Ae^{rac{-E_a}{RT}}$

$$\rho \frac{\partial \mathbf{\Phi}}{\partial t} + \rho \vec{\mathbf{V}} \cdot \nabla \mathbf{\Phi} = \nabla \rho \mathbb{D}_{\Phi} \nabla \mathbf{\Phi} + \mathbf{S}_{\Phi} \qquad k = A e^{\frac{-E_a}{RT}}$$

$$k = AT^n e^{\frac{-E_a}{RT}}$$

$$\tilde{E} = y_m - \bar{y}_e$$