## Computational geophysics

Equation e: 10 heat equation

$$S_{C_v} \partial_t T = \partial_x (K \partial_x T) + f$$

S: density S= S(x) er: specific heat cr=Cu(X) K: conductivity K= K(X)

homogeneous materials &= const, cv = const, K = const:

$$\partial_{t} T = \frac{\kappa}{\varrho_{cv}} \partial_{x}^{2} T$$

$$D = const \quad D \cdot diffusivity$$

$$\partial_t T = D \partial_x^2 T$$
 diffusion equation

ID wave equation

 $9 \partial_t^2 s = \partial_x (\mu \partial_x s) + f$ 

u: (shear) modulus u=u(x) g: density S=S(x)

s. displacement s(x,t)

homogeneous material 
$$S = const$$
,  $p = const$ 

$$\partial_t^2 s = \int_S dx s$$

$$e^2 = const$$

$$\partial_t^2 s = c^2 \partial_x^2 s$$

