Transverse vibrations of strings

variables: $t, x$

configuration variables
space: primal complex
intervals

source variables
space: dual complex
intervals

Source variables:
- Transversal displacement: $y$
- Transversal velocity: $v_y = \partial_t y$
- Slope: $\alpha = \partial_x y$
- Body force: $q_y$
- Momentum: $p_y$
- Transversal component of tension: $T_y$
- Dissipative force: $q^d_y$
- Impressed force: $q^i_y$
- Mass: $\rho$
- Damping coefficient: $h$
- Horizontal component of traction (constant): $T_x$

Fundamental equation: d'Alembert

\[
\rho \frac{\partial^2 y}{\partial t^2} - T_x \frac{\partial^2 y}{\partial x^2} = q_y - h \frac{\partial y}{\partial t}
\]

Reference:
- SOL14-7; http://discretephysics.dicar.units.it