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FORMULA VISUALIZER

INTERACTIVE ENGINEERING FORMULA EXPLORER

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PARAMETERS

FORMULA CATEGORY

BEAM ANALYSIS

COLUMN ANALYSIS

STRUCTURAL DYNAMICS

DESCRIPTION

Deflection, bending moment, and stress analysis

VISUALIZATION

FIGURE 1. INTERACTIVE FORMULA VISUALIZATION

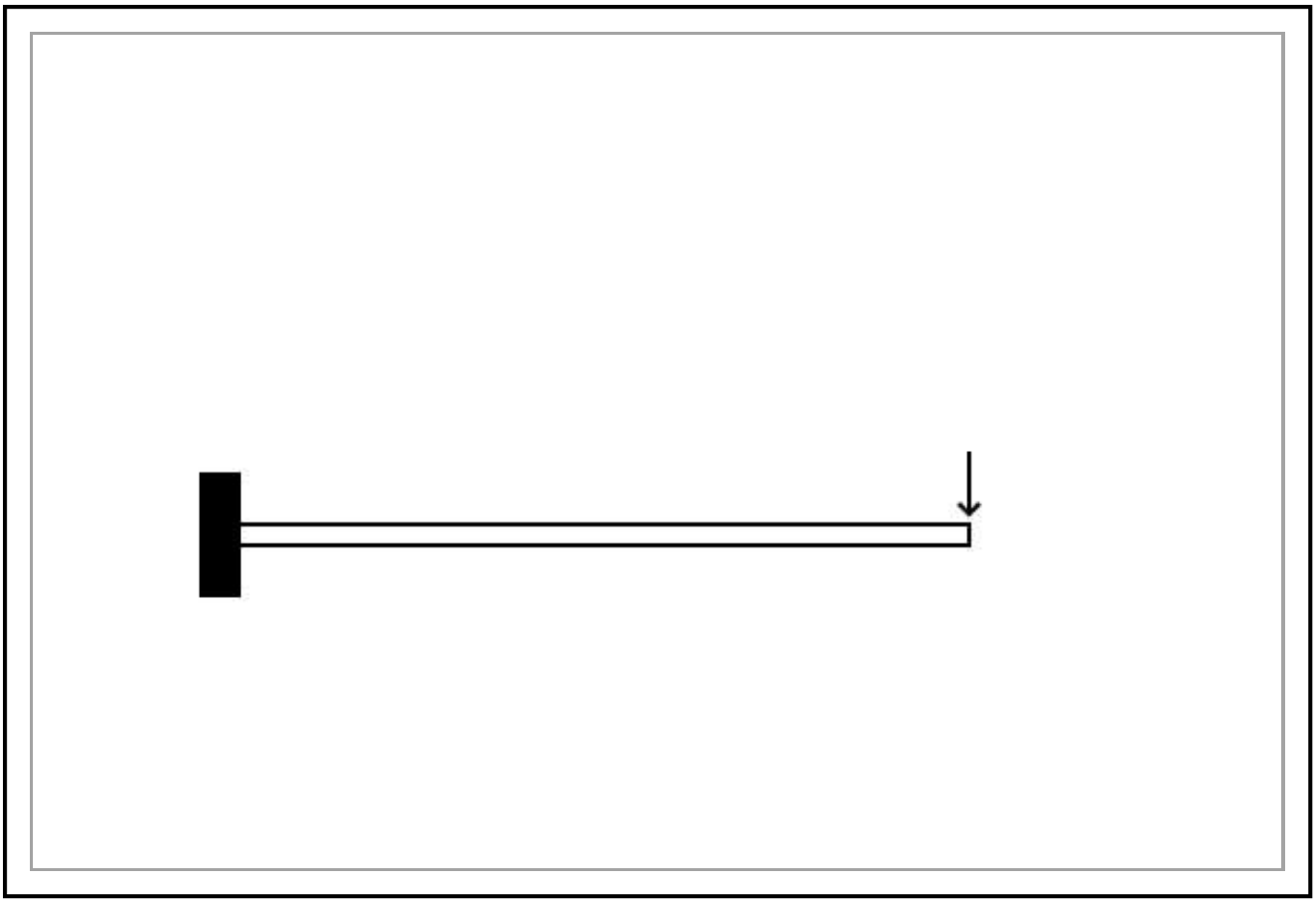

Fig. 1. Visual representation of engineering formulas with parameter sensitivity

BEAM ANALYSIS FORMULAS

Select a formula to explore its calculation and verification

Cantilever Beam Deflection

Simply Supported Beam - Center Deflection (Placeholder)

Maximum Bending Moment (Placeholder)

Cantilever Beam Deflection

$$\delta = (P \times L^3) / (3 \times E \times I)$$

Maximum deflection at free end of cantilever beam under point load

PARAMETERS

POINT LOAD (N)

1000.000

BEAM LENGTH (M)

3.000

ELASTIC MODULUS (MPA)

200000.000

MOMENT OF INERTIA (M^4)

0.000100

RESULT

MAXIMUM DEFLECTION: **0.0004** m

VERIFY WITH WOLFRAM ALPHA