← BACK TO SIMULATIONS

LOAD PATH TRACER

VISUALIZING FORCE FLOW THROUGH STRUCTURAL SYSTEMS

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PARAMETERS

STRUCTURE TYPE

RIGID FRAME

TRUSS SYSTEM

SHEAR WALL

SIMPLE BEAM

DESCRIPTION:
Moment-resisting frame with fixed connections

LOADING

APPLIED LOAD(KN)

50.000

LOAD POSITION((0=LEFT, 1=RIGHT))

0.50

DISPLAY OPTIONS

☑ SHOW FORCES

☐ SHOW MOMENTS

ANIMATION SPEED

1.0

START LOAD PATH ANIMATION

VISUALIZATION

FIGURE 1. LOAD PATH VISUALIZATION

P = 50 kN
↓

L = 8m

H = 4m

R=25.0kN   R=25.0kN

Applied Load   Load Path 1   Load Path 2   Reactions   ⸤⸥ Deformed Shape
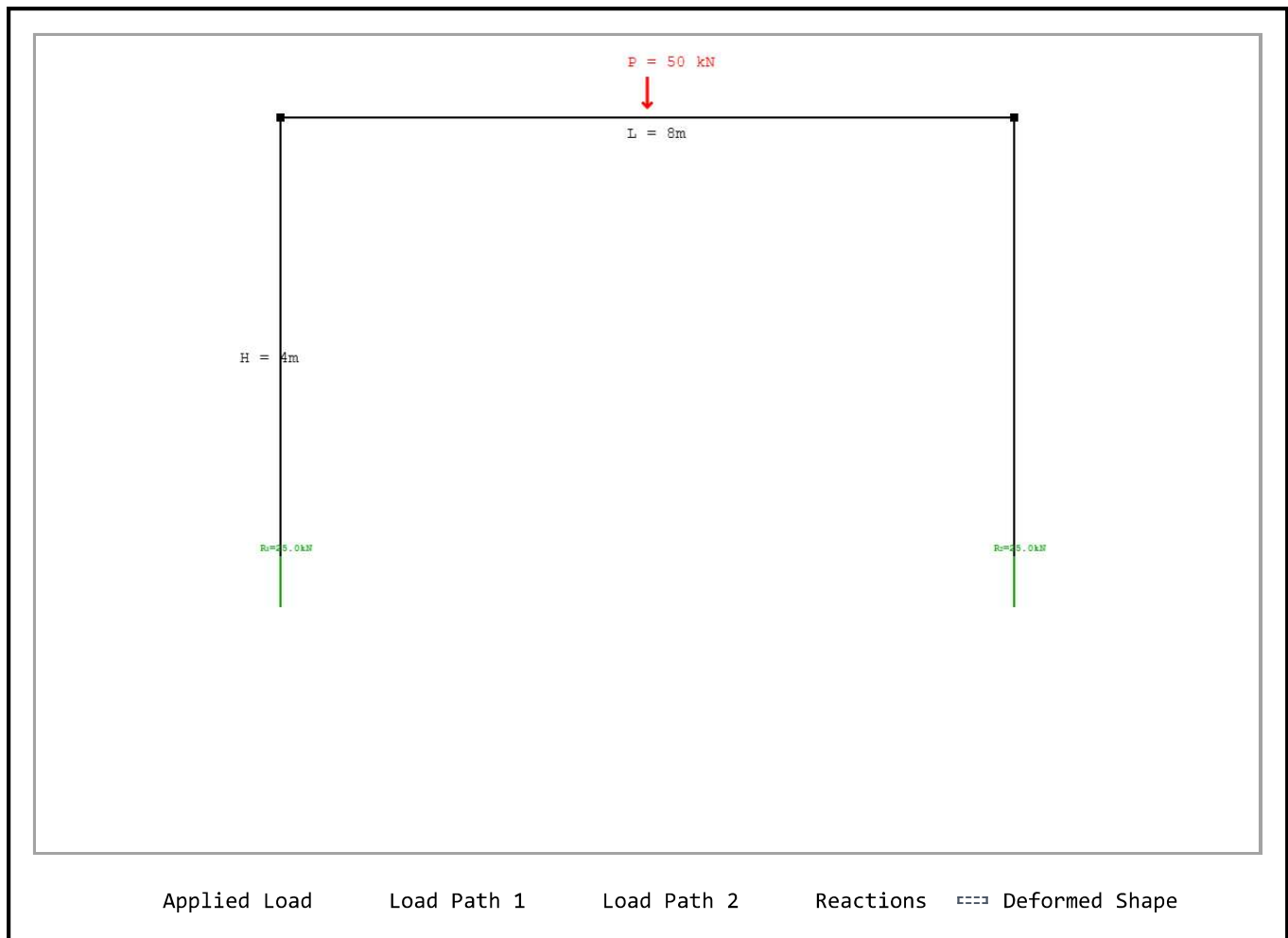
Fig. 1. Interactive demonstration of how forces travel through different structural systems

Understanding Load Paths

KEY CONCEPTS

- **Load Path:** *Route forces take from application to foundation*
- **Stiffness:** *Controls distribution of forces between elements*
- **Continuity:** *Ensures forces have complete path to supports*
- **Redundancy:** *Multiple paths provide backup if one fails*

STRUCTURAL SYSTEMS

- **Frames:** *Moment connections allow force redistribution*
- **Trusses:** *Pin connections create predictable force paths*
- **Shear Walls:** *Resist lateral forces through cantilever action*
- **Simple Beams:** *Direct load transfer to supports*

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