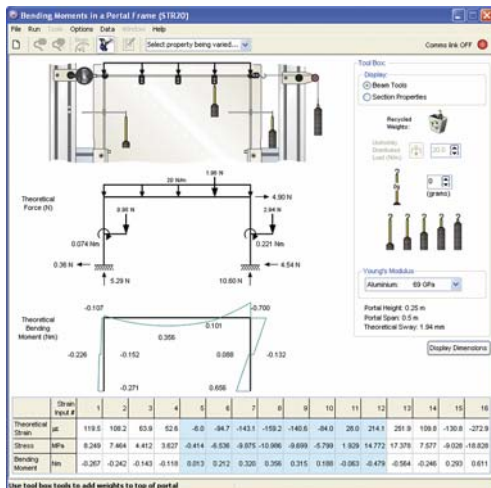


BENDING MOMENTS IN A PORTAL FRAME

STR20

For the study of bending moments and sway in portal frames.



SCREENSHOT OF THE OPTIONAL TECQUIPMENT STRUCTURES SOFTWARE

Students use masses on weight hangers to apply various loads to a portal frame. The portal has three members: a horizontal beam and two vertical members or 'legs' joined at two upper corners. All members are of the same material and have the same flexural rigidity, i.e. value. Deflection is measured by a digital indicator.

LEARNING OUTCOMES:

- Strain gauge linearity
- Using strain measurement to find the bending moment
- Bending moments and sway for vertical and horizontal loads
- Bending moments for internal and external moments on vertical members
- Comparison of ideal and non-ideal structures

ESSENTIAL BASE UNIT:

- Structures Test Frame (STR1) 188

RECOMMENDED ANCILLARIES:

- Structures Software (STRS) for virtual experiments 190
- OR
- Automatic Data Acquisition Unit (STR2000) for automatic data acquisition and virtual experiments 189

ALTERNATIVE PRODUCTS:

- Frame Deflections and Reactions (STR18) 207