

# Erratum to HERON Vol. 50, No. 1 on page 63 and 64.

## Method for including restrained warping in traditional frame analyses

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It was brought to our attention that a calculation error occurred in HERON Vol. 50, No. 1 on page 63 and 64. The section below includes the correct numbers.

The frame program computes a rotation of  $-140 \cdot 10^{-5}$  rad in the middle of the bridge. This is 7% smaller than the unrestrained behaviour. The program computes the torsion moment  $M_t = -1345 \cdot 10^4$  Nm for the left beam and  $1345 \cdot 10^4$  Nm for the right beam. Therefore, the largest bi-moment in the right end of the left beam is

$$B = -\frac{l}{\beta} M_t = -\frac{30}{14.30} 1345 \cdot 10^4 = -2822 \cdot 10^4 \text{ Nm}^2 .$$

The largest bi-moment in the left end of the right beam is

$$B = \frac{l}{\beta} M_t = \frac{30}{14.30} (-1345 \cdot 10^4) = -2822 \cdot 10^4 \text{ Nm}^2 .$$

Using the torsion moment and bi-moment a program for cross-section analysis calculates the shear stress distribution and the normal stress distribution. The largest shear stress is  $-1.74$  N/mm<sup>2</sup>, which occurs everywhere in the bottom flange to the left of the symmetry plane. The largest normal stress is  $3.64$  N/mm<sup>2</sup>, which occurs in the symmetry plane in the left side of the bottom flange (Fig. 6).



Figure 6: Normal stress distribution due to restrained warping in the middle cross-section