Rotated Rigid Slats

Fig. D)

W_o S α D SS $(\beta_o + \delta)$ $-$ heave W_{fr} x

Original Circle

Note: the negative of a negative-valued (transtensional) heave is a positive distance
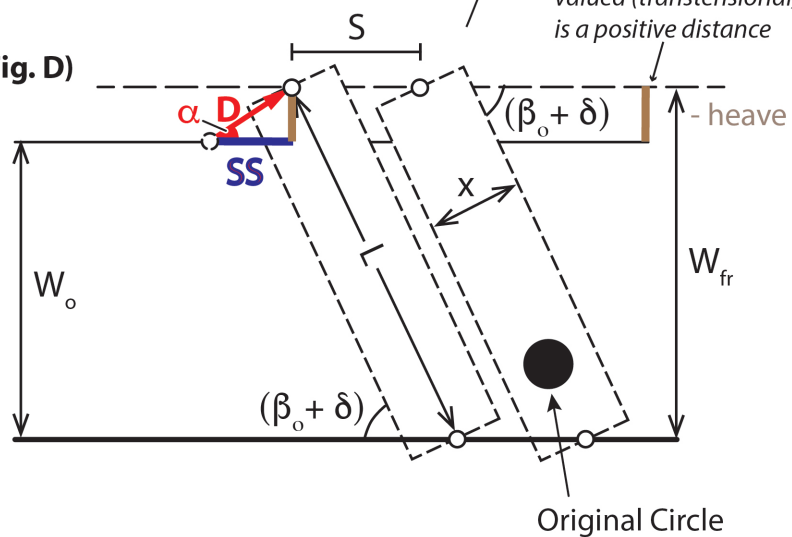
Deformable Slats
(strike-slip case)

Fig. E)

S $(90 - \beta_o + \delta)$ axial shortening

$W_o = W_{fd}$ D^* x $(\beta_o + \delta)$

Strain Ellipse

strain axes
(X, vertical)

Z Y

$(\beta_o + \delta)$
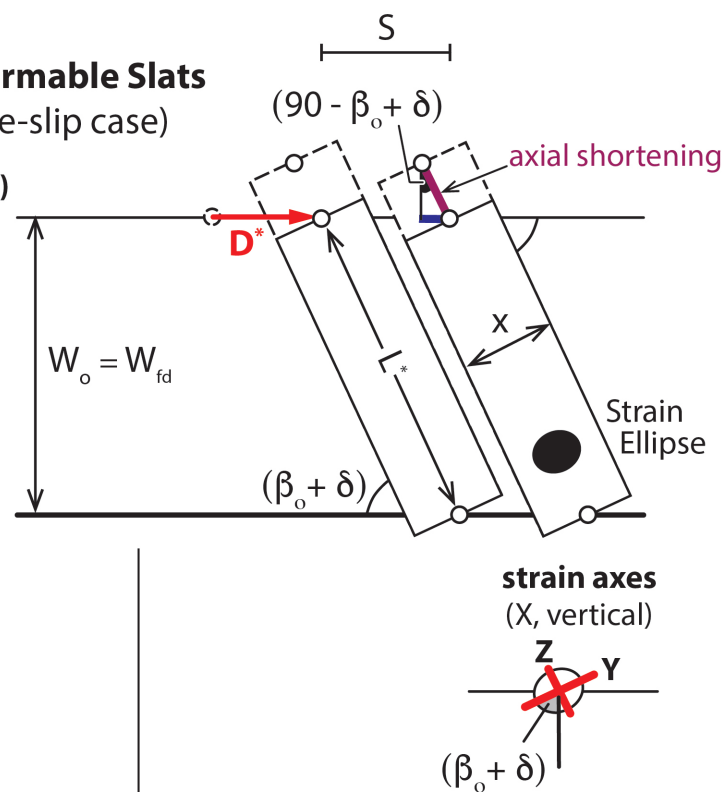
Deformable Slats
(transpression)

Fig. F)

S $-$ heave α^* axial shortening

$+$ heave* D^* $(\beta_o + \delta)$

W_o $SS^{\bullet}$ x W_{fd}

$(\beta_o + \delta)$

strain axes
(X, vertical)

Z Y

$(\beta_o + \delta)$
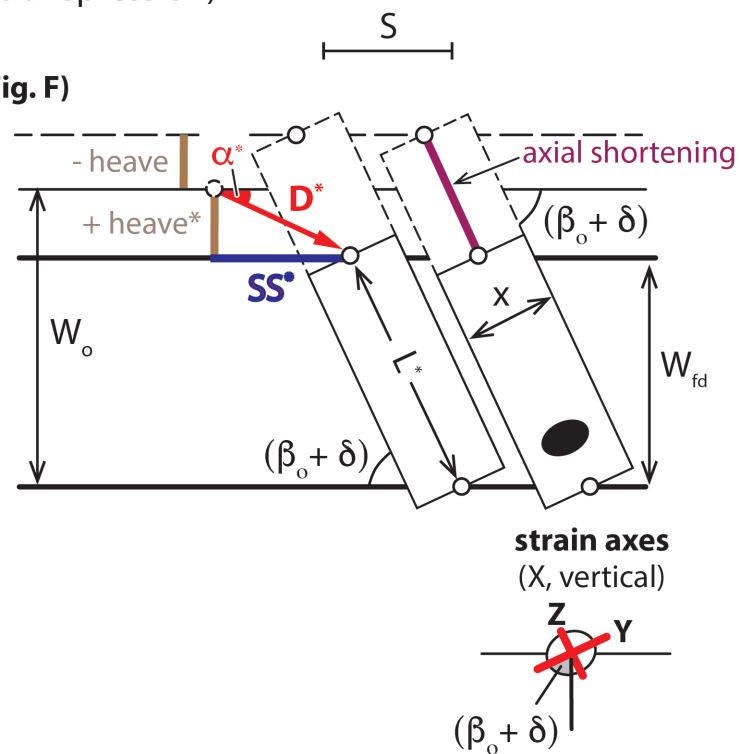
Deformable Slat Model—generalized to transpression

(24) $(W_o - W_{fd}) = $ **Heave*** $ = $ **D^*** $\times SIN(\alpha^*)$ 　　　　See Fig. F

(25) $W_o = $ [**D^*** $\times SIN(\alpha^*) + W_{fd}$] 　　　　See Fig. F.

(26) $W_{fd} / W_o = $ [W_{fd} / [**D^*** $\times SIN(\alpha^*) + W_{fd}$] 　　　　See Fig. F. 　　　　Stretch of the zone width

equation 16 is replaced by
(27) $L^* = W_{fd} / SIN(\beta_o + \delta)$ 　　　　See Fig. F

equation 18 is replaced by 　　　　See Fig. F 　　　　Axial stretch of slat
(28) $L^* / L = (1 + e_3) = $ [**W_{fd}** $/ $ **W_o**] $\times [SIN(\beta_o) / SIN(\beta_o + \delta)]$

equation 17 is replaced by 　　　　See Fig. F 　　　　Axial shortening of slat
(29) $(L - L^*) = $
$\{$[**W_o** $/$ **W_{fd}**] $\times (W_{fd} / SIN(\beta_o + \delta)) \times (SIN(\beta_o + \delta) / SIN(\beta_o))\} - [W_{fd} / SIN(\beta_o + \delta)]$ 　　　　Combine (27) and (28)

equation 20 is replaced by
(30) $(1 + e_1) = SIN(\beta_o + \delta) / SIN(\beta_o) \times $ **W_o** $/$ **W_{fd}** 　　　　See Fig. F

equation 22 (stretch of strike-perpendicular line) is replaced by
(31) stretch $= 1 / [(SIN((\beta_o + \delta) / SIN(\beta_o) \times ($**$W_o$** $/$ **W_{df}**$))^2 \times SIN^2(\beta_o + \delta) + COS^2(\beta_o + \delta)]^{-1/2}$

(32) **SS^*** $= $ **D** COS $\alpha + [TAN\{90 - (\beta_o + \delta)\} \times \{$**Heave***$-$ **Heave**$\}]$ 　　　　See Fig. F

(33) **SS^*** $= $ **D** COS $\alpha + [TAN\{90 - (\beta_o + \delta)\} \times \{[$**$D^*$** $\times SIN(\alpha^*)] - $ **Heave**$\}]$ 　　　　Insert (24)
　　　　(also, Eqns 9, 11, 13)