## $arc\ tangent$

## $beam\ tangent$

 $d\theta$  $\kappa ds$ 

$$d\theta_1 = \kappa_1 ds$$

$$d\theta_2 = \kappa_2 ds$$

db

$$e_{i-1}$$

$$\boldsymbol{e}_{n-2}$$

$$F(s+ds)$$

$$\kappa_1 \boldsymbol{d}_1$$



$$oldsymbol{\kappa} oldsymbol{b}_{2i+1}$$

$$\kappa b_{2i-1}$$

$$oldsymbol{\kappa} oldsymbol{b}_{2i}^+$$

$$\kappa b_{n-2}$$

$$M_1(s+ds)$$

$$M_2(s+ds)$$

$$M(s+ds)$$

$$N(s+ds)$$

$$Q(s+ds)$$

$$T_1(s+ds)$$

$$T_2(s+ds)$$

$$oldsymbol{u}_{2i-1}$$

$$oldsymbol{u}_{2i-2}$$

$$oldsymbol{x}_{2i-1}$$

$$oldsymbol{x}_{2i-2}$$

$$\boldsymbol{x}_{n-1}$$

$$oldsymbol{x}_{n-2}$$

$$\frac{\|\boldsymbol{e}_0\|}{2}$$

$$\frac{\|\boldsymbol{e}_{n-1}\|}{2}$$