

Computation of the inner forces (MFEM/MGIS)

Computation of the strain $\underline{\varepsilon}_g^{\text{to}} = B_g U_e$



Behaviour integration - (MGIS/MFront)



Element inner forces

$$F_e = \sum_g^T B_g \underline{\sigma}_g \mathbf{w}_g$$

Computation of the stiffness matrix (MFEM/MGIS)

Element stiffness matrix $K_e = \sum_g^T B_g \left(\frac{d\underline{\sigma}}{d\Delta \underline{\varepsilon}^{\text{to}}} \right)_g B_g \mathbf{w}_g$