

recording 1 – time: 27:26

typo $\mathbf{a} = A s \mathbf{b}_1 = E A s \epsilon \mathbf{b}_1$

corrected $\mathbf{a} = A s \mathbf{b}_1 = E A \epsilon \mathbf{b}_1$

typo $\dots + \sum_e \int_L \delta(\Delta\epsilon^N) E A s dy$

corrected $\dots + \sum_e \int_L \delta(\Delta\epsilon^N) A s dy$

error $\Delta\epsilon^N = \frac{1}{L} \Delta\mathbf{v}_e (\mathbf{b}_L \mathbf{b}_L^T) \Delta\mathbf{v}_e$

correction $\Delta\epsilon^N = \frac{1}{L^2} \Delta\mathbf{v}_e (\mathbf{b}_{C_1} \mathbf{b}_{C_1}^T + \mathbf{b}_{C_2} \mathbf{b}_{C_2}^T) \Delta\mathbf{v}_e$

with

$$\mathbf{b}_{C_1}^T = [-1 \ 0 \ 1 \ 0]$$

$$\mathbf{b}_{C_2}^T = [0 \ -1 \ 0 \ 1]$$

consequently follows for \mathbf{K}_G :

time 45:42

$$\mathbf{K}_G = \delta(\Delta\mathbf{v}_e)^T A s \int_L (\mathbf{b}_{C_1} \mathbf{b}_{C_1}^T + \mathbf{b}_{C_2} \mathbf{b}_{C_2}^T) dy \Delta\mathbf{v}_e$$