$$\beta^2 \boldsymbol{M}_{\mathrm{ss}} \tilde{X}_{\mathrm{s}}^{\Delta} = \left(-(\boldsymbol{J}_{\mathrm{ss}} + \beta \boldsymbol{C}_{\mathrm{ss}}) + \boldsymbol{J}_{\mathrm{sf}} \left(\beta \boldsymbol{M}_{\mathrm{ff}} + \boldsymbol{J}_{\mathrm{ff}} \right)^{-1} \boldsymbol{J}_{\mathrm{fs}}(\beta) \right) \tilde{X}_{\mathrm{s}}^{\Delta}.$$