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Static and dynamic analysis of sandwich panel with spatially varying non-Gaussian properties

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Supplementary information

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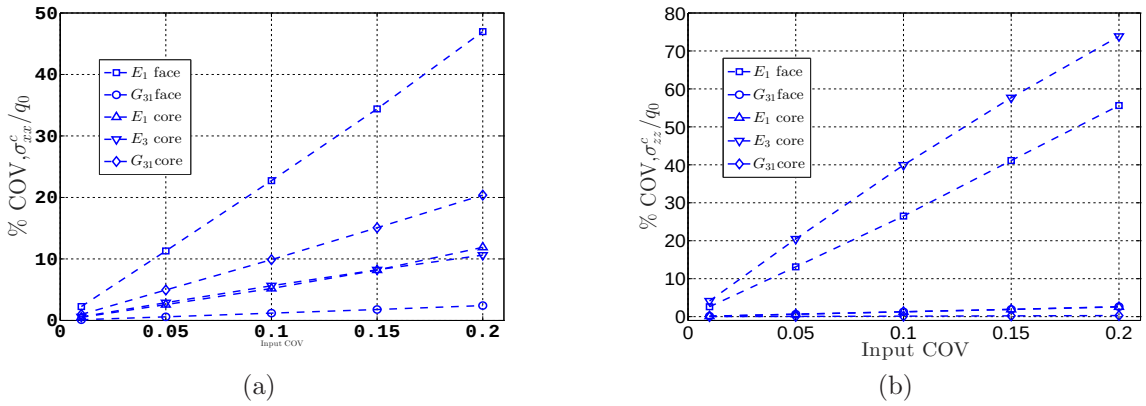


(a) (b)

Figure S1: Percentage COV of normalized core (a) longitudinal stress (σ^c_{xx}/q_0) and (b) transverse normal stress (σ^c_{zz}/q_0) of a Type 1 SS beam subjected to sinusoidal distributed load load evaluated at x=0.1L, for C/t=8 and considering variability in individual material properties

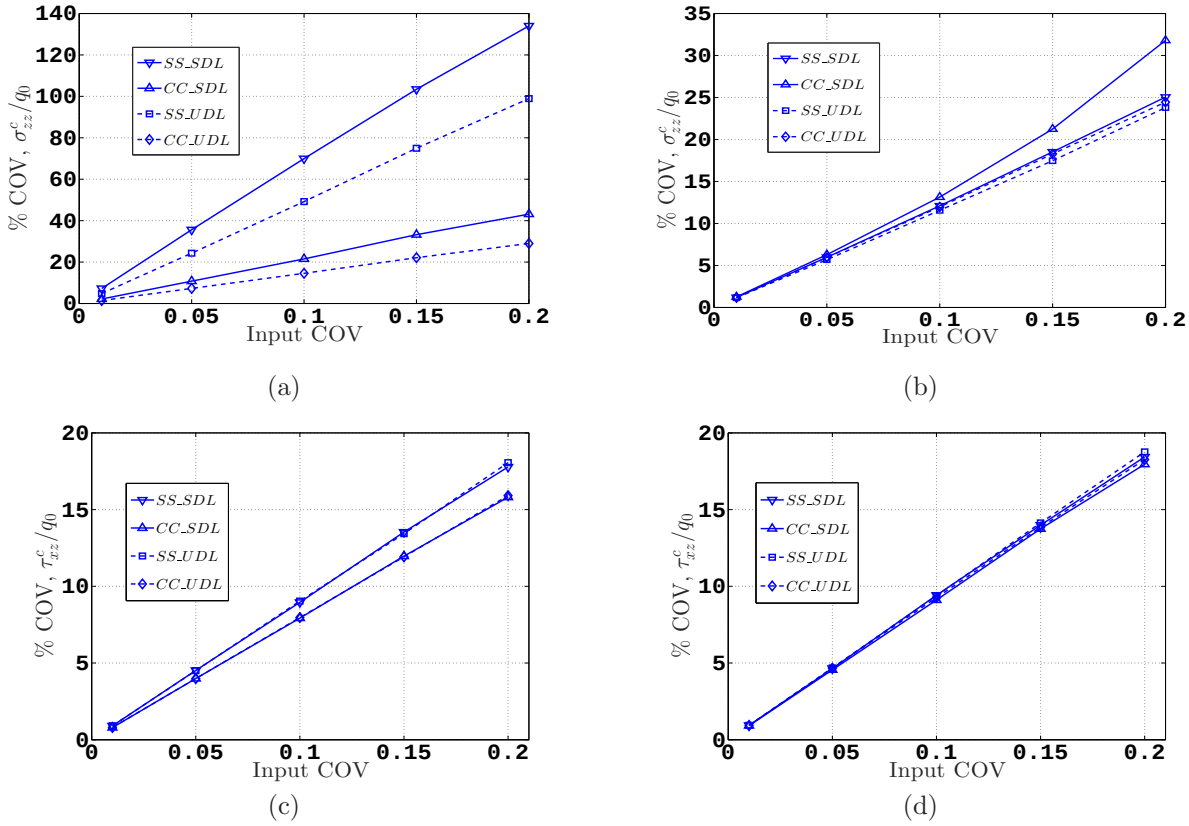


Figure S2: Percentage COV of the core transverse normal stress (σ^C_{zz}/q_0) for (a) Type 1, (b) Type 2 and core transverse shear stress (τ^C_{xz}/q_0) for (c) Type 1, (d) Type 2 beam evaluated at x=0.1L with different loading and boundary conditions for C/t=8 material system considering variability in all properties

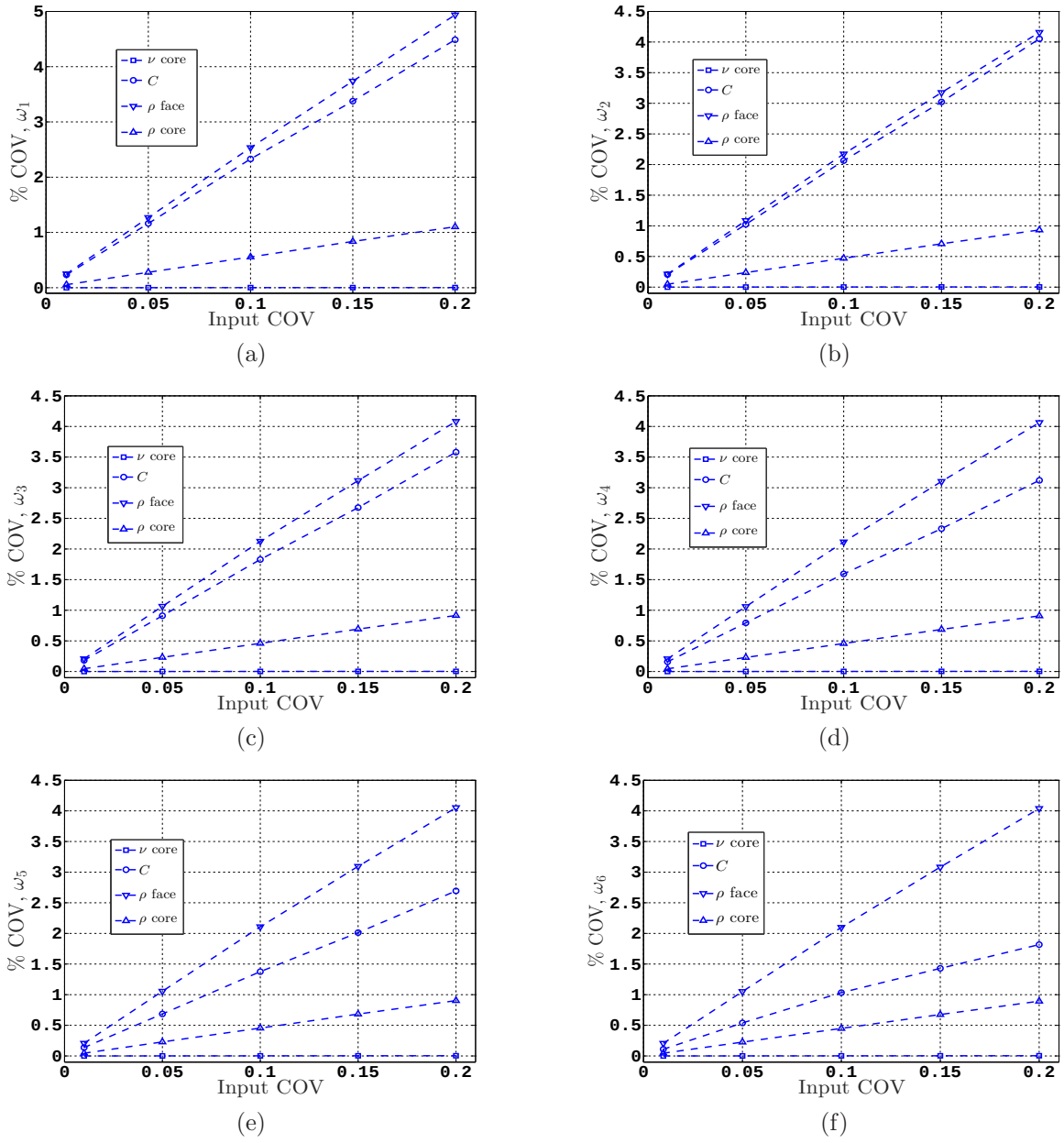


Figure S3: Percentage COV of the first six natural frequencies of Type 1 SS beam with C/t=8, considering ν core, C, ρ face and ρ core as input random field

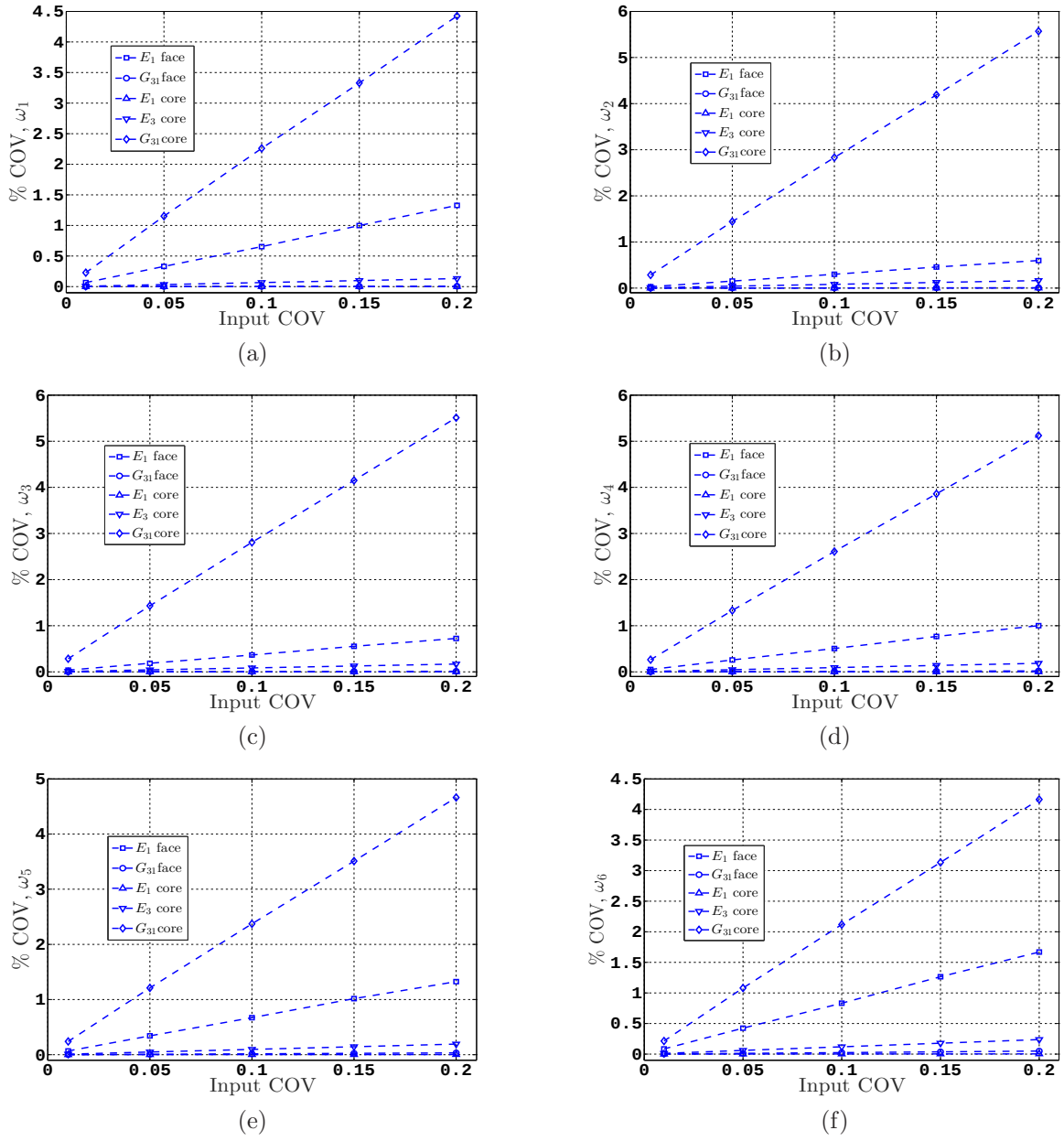


Figure S4: Percentage COV of the first six natural frequencies of Type 1 SS beam with C/t=8, considering individual material variability as input random field

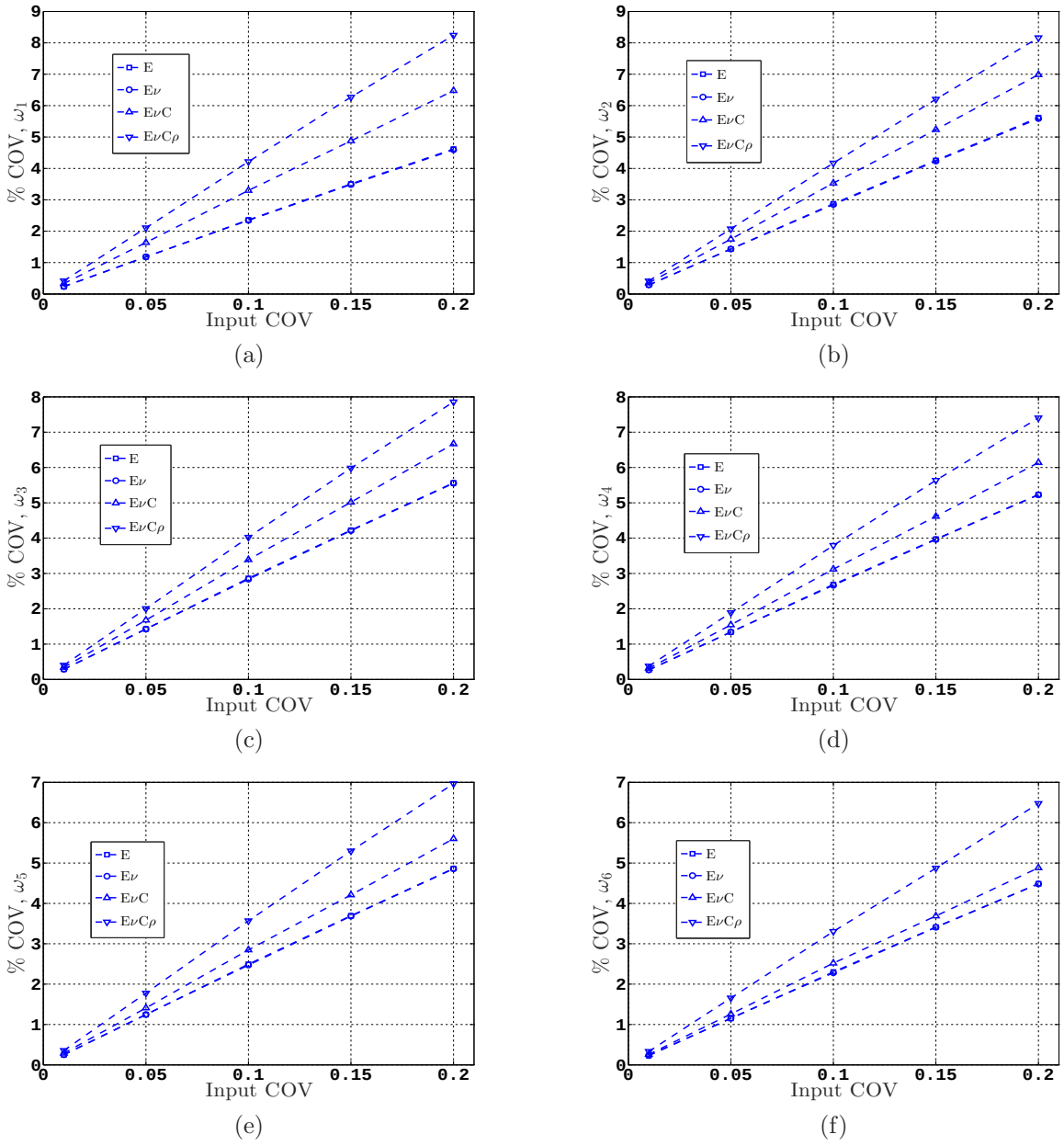


Figure S5: Percentage COV of the first six natural frequencies with increasing of Type 1 SS beam considering different variability conditions

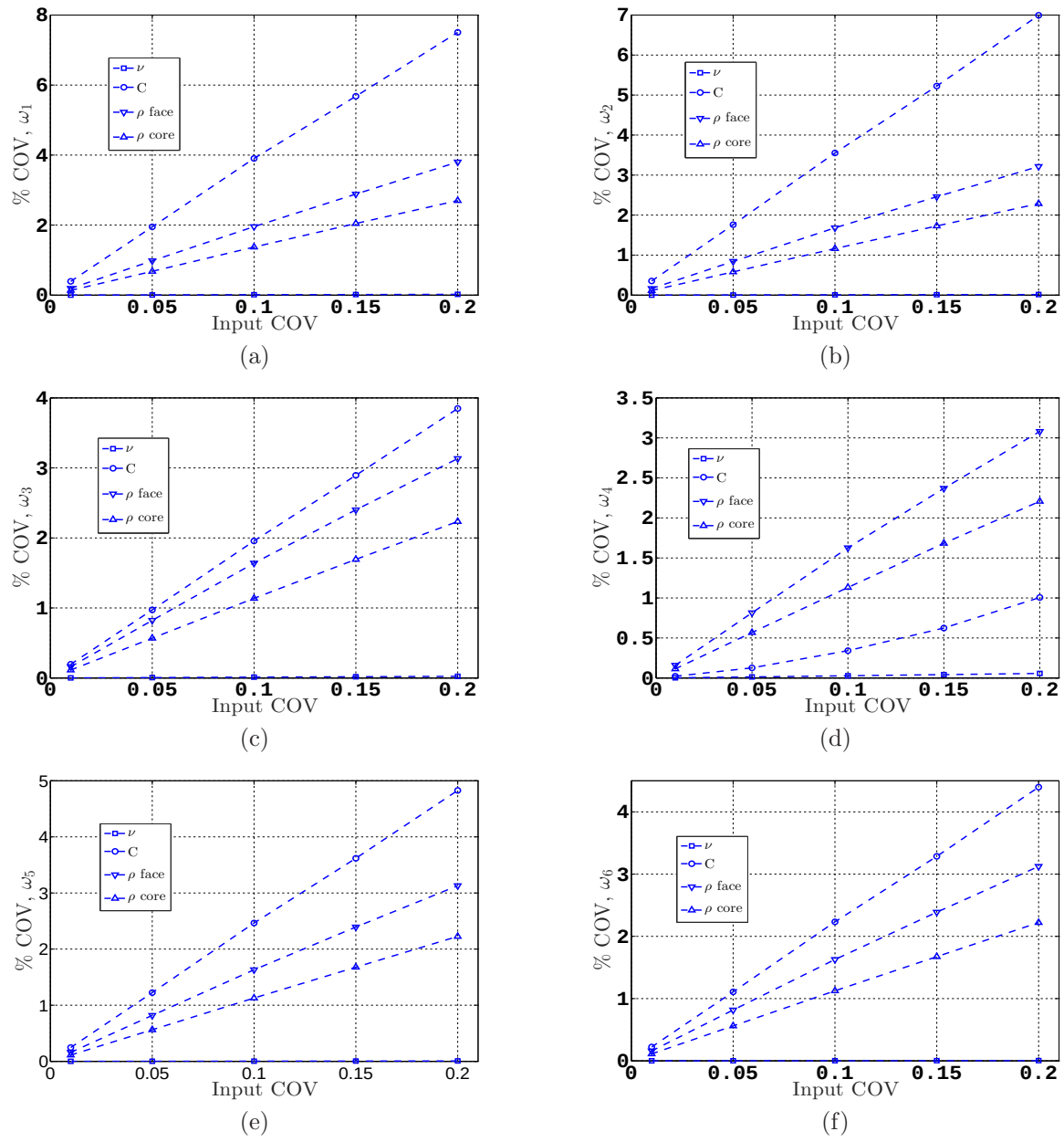


Figure S6: Percentage COV of the first six natural frequencies of Type 2 SS beam with C/t=8, considering ν core, C, ρ face and ρ core as input random field

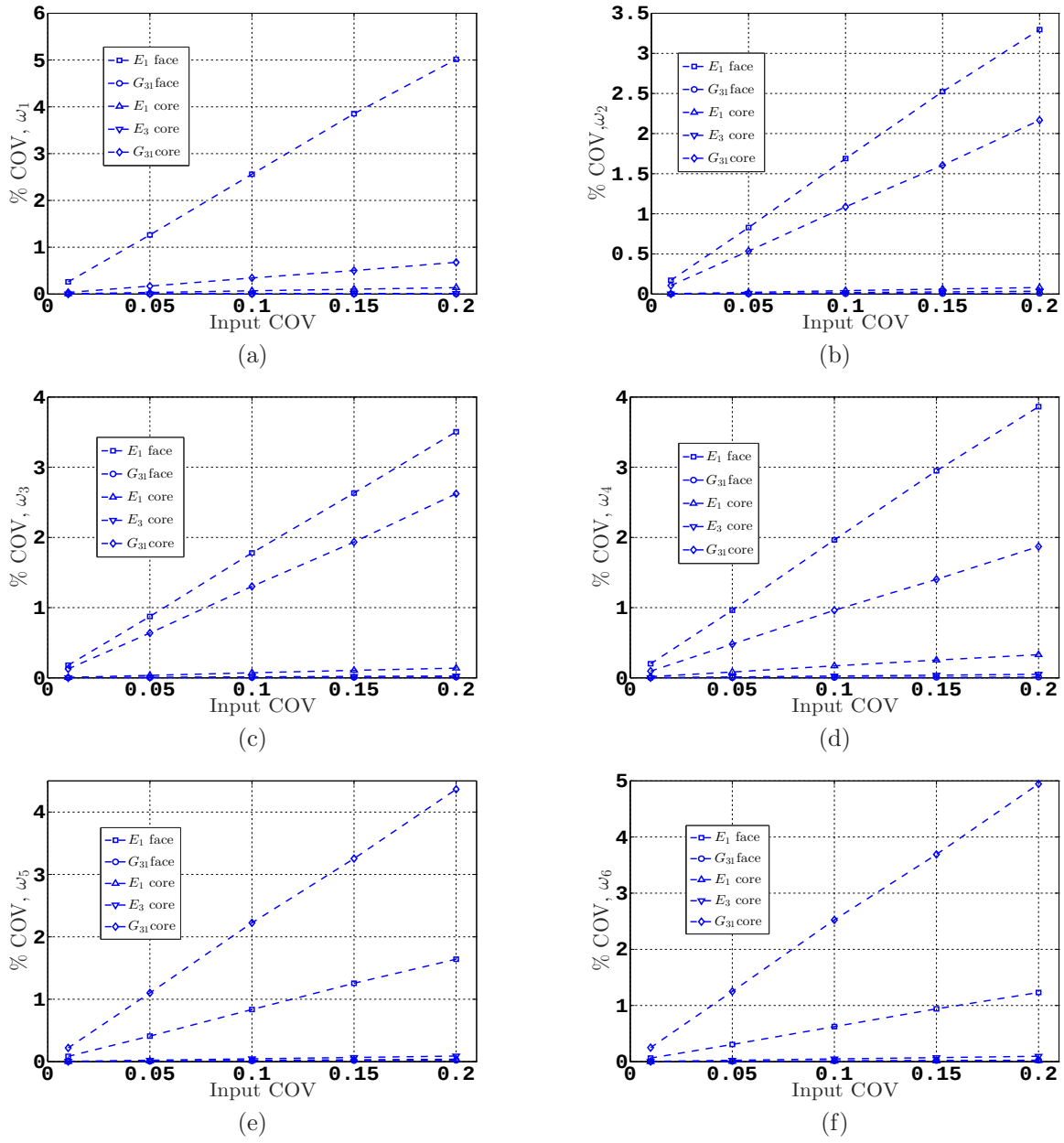


Figure S7: Percentage COV of the first six natural frequencies of Type 2 SS beam with C/t=8, considering individual material variability as input random field

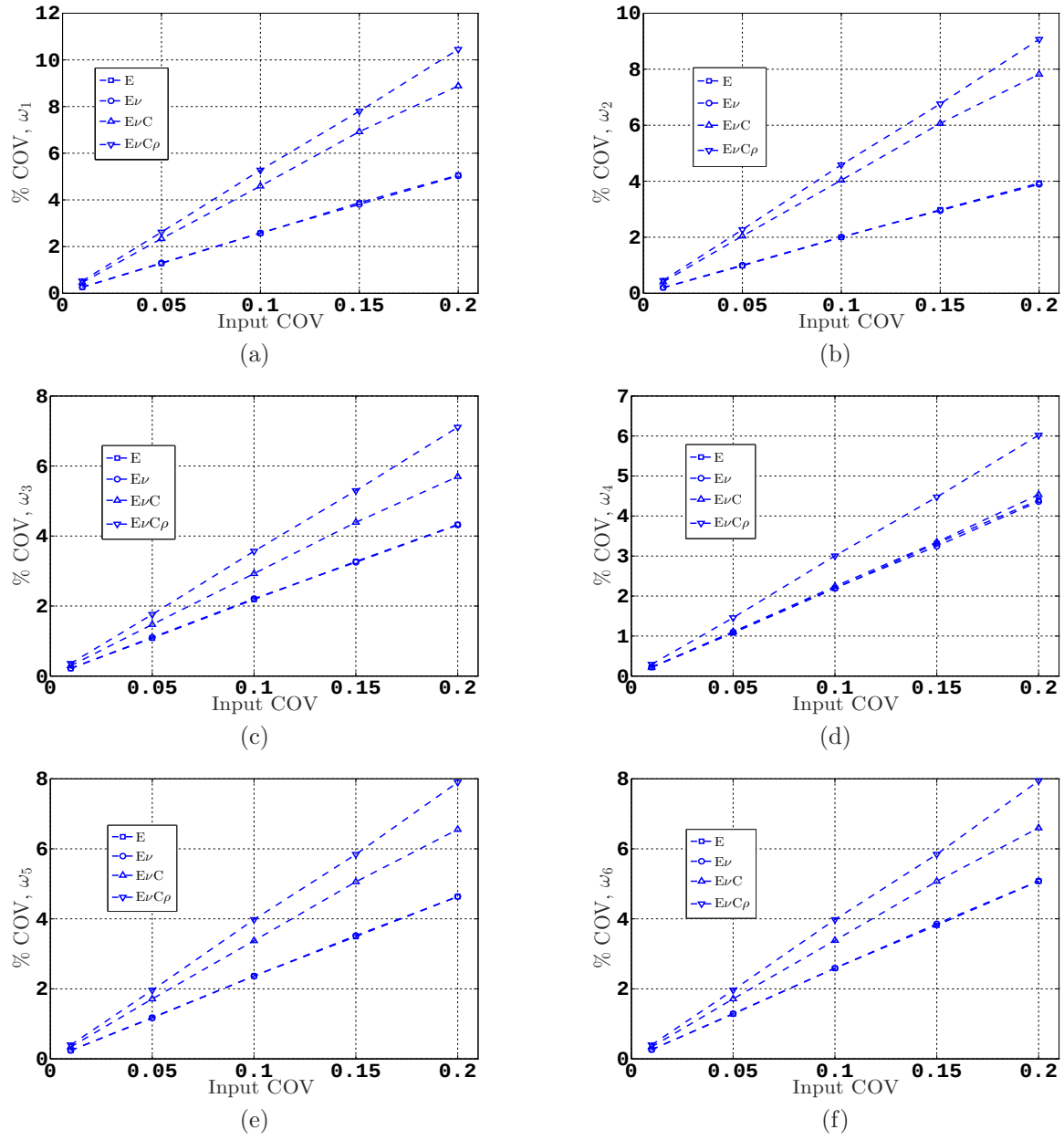
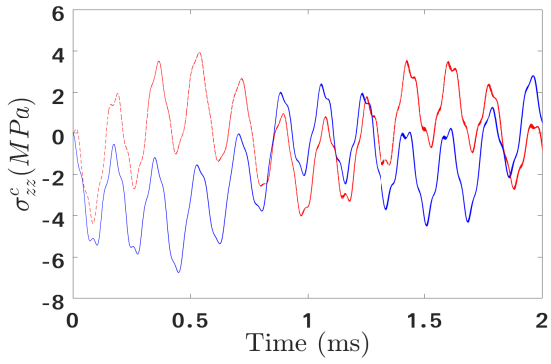
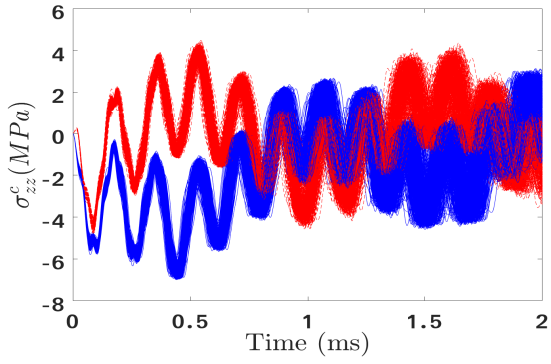


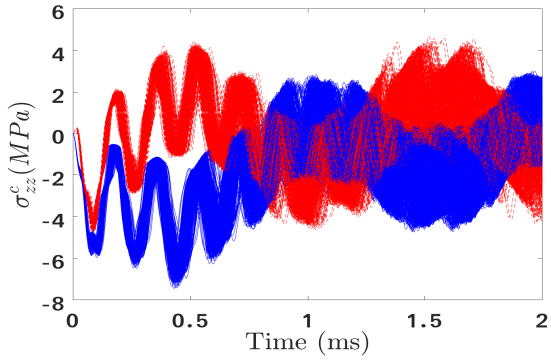
Figure S8: Percentage COV of the first six natural frequencies with increasing of Type 2 SS beam considering different variability conditions



(a)



(b)



(c)

Figure S9: Stochastic response of the transverse normal stress σ_{zz} at the top face-core (–) interface and bottom face-core (--) interface (evaluated at mid-span location of the beam) considering uncertainty in (a) Poisson's ratio of the core, (b) density of face and core and (c) depth of the core evaluated at the mid-span of the beam

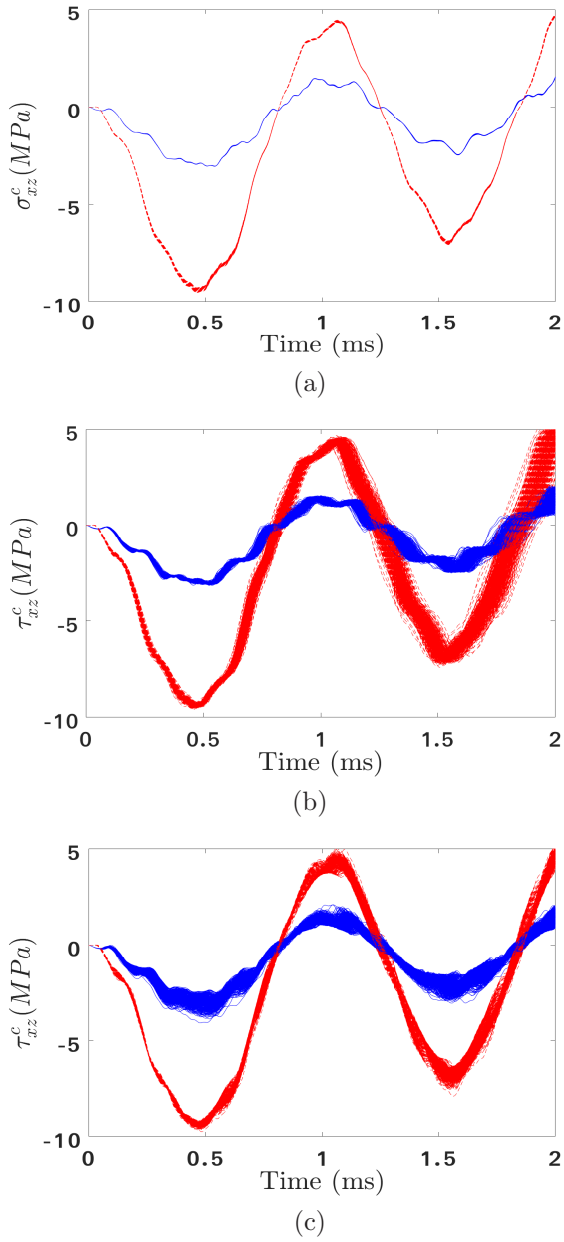


Figure S10: Stochastic response of the transverse normal stress σ_{xz} at the top face-core (–) interface and bottom face-core (--) interface (evaluated at mid-span location of the beam) considering uncertainty in (a) Poisson's ratio of the core, (b) density of face and core and (c) depth of the core evaluated near support