Glossary and Nomenclature

BF	Braced Frame
DBE	Design Basis Earthquake
DS	Damage State
EDP	Engineering Demand Param.
FE	Finite Element
GMM	Ground Motion Model
gms	ground motions
IM	Intensity Measure
MCS	Monte Carlo Simulation
NLTHA	Non-Linear Time History An.
NSC	Non-Structural Components
PC	Principal Component
PCA	Principal Component An.
PCE	Polynomial

Table 2
Probabilities density distributions of the parameters of the site-based GMM.

Model	Units	Distribution

Fig. 7. Brute-force MCS state-dependent fragility functions: grey lines represent single seed simulations; dashed-dot dark-red lines depict the 90% confidence bounds, whilst dashed-dark red ones

Fig. 8. Brute-force MCS state-dependent fragility functions, by means of PGA**: grey lines represent single seed simulations; dashed-dot dark-red lines depict the 99% confidence bounds, whilst dashed-dark red ones the 50%.** PGA **is the IM adopted, according to**

Fig. 9. Error plots considering the initial damage limit state (a) DS_0**, namely design of experiment** D_0**, and the (b)**

Fig. 10. (a) Comparison of the histograms for the outputs, Y_{PCE}, of the PCE metamodel and the EDPs, Y_{D_0}, of the D_0 dataset, i.e., the initial damage state condition DS_0, and (b) the g

Fig. 15. Transition state matrices for the SPIF #2: (a) counters and (b) percentages of simulation for each initial final damage state level

Fig. 16. (a) Histogram

Fig. 18. Bootstrap-PCE state-dependent fragility curves of the SPIF #2 vertical tank: black-dotted thick

Table

Table A.2
Histograms and distributional models inferred for each IM.

Index	Name

DQG

DOG

Fig.

Fig. A.6. Histograms and distributional models for IMs from 37

[7] Abbiati G, Broccardo M, Abdallah I, Marelli S, Paolacci F. Seismic fragility analysis based on artificial ground motions and surrogate modeling of validated structural simulators. Earthq Eng Struct