

Seismic Performance Evaluation of SMA-Retrofitted RC Columns Using Material Testing Integrated Simulation

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ABSTRACT

In the field of structural engineering, shape memory alloy (SMA) has gained great attentions as one of the smart materials. For widespread use of SMA, its complex thermomechanical behavior and applicability to various circumstances need to be thoroughly studied through advanced evaluation approaches. This study investigates the seismic performance of RC columns retrofitted with prestressed SMA wires. A new simulation method, named material testing integrated (MTI) simulation, is adopted to include more realistic behaviors of actively confined concrete. In the current study, the concept of MTI simulation is demonstrated, and confinement effect of SMA on the RC columns is assessed.

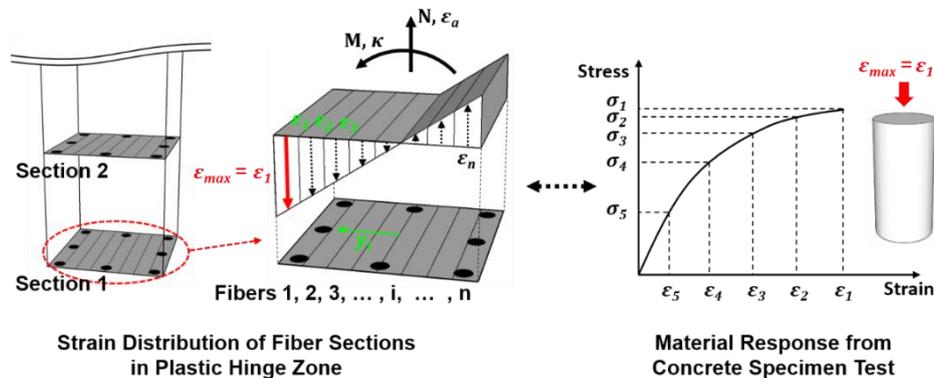


Fig. 1 Computation of section responses using compression test results of a concrete specimen

REFERENCES

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