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## Modeling of composite beam connected to box-column

Mohammadreza Eslami<sup>1</sup>, Hisashi Namba<sup>1</sup> and Mustafa Mahamid<sup>2</sup><sup>1</sup>Clemson University, USA<sup>2</sup>University of Illinois-Chicago, USA

Following to experimental test observations and findings of mechanical behavior of composite beam connected to Box-column, in this paper a model is proposed to represent the restraining characteristics of composite beam to Box-column connection. In this model, in order to consider the characteristics of out-of-plane deformation of web connection, the beam element is used and the web section is partially reduced at the vicinity of column face. Since past investigations proposed linear reduction of web section from the distance of column face, in this model almost half of beam height is reduced linearly. Beam element is located in the center of steel beam and concrete element is prepared at the center of concrete slab. Concrete part is modeled using truss element. Moment-Rotation (Mb- $\theta$ b) Hysteresis graphs are shown. Acceptable good correspondence of restraining characteristics obtained from conducted analysis by this model and experimental test results is found. It is also shown that Curvature distribution along the beam length and strain behavior, has correspondence with the mechanical findings of published finite element analysis.

### Biography

Mohammadreza Eslami has completed his PhD from Kobe University and Post-doctoral studies from Michigan State University and Clemson University. He is working in the Risk Engineering and System Analytics Center (RESA) and his current research focuses on Vapor Cloud Explosion, risk assessment of accidental industrial explosions and intentional malicious blast attacks. He has published more than 10 papers in reputed journals.

eslami@msu.edu

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