

Lecture Announcement

Title

Reflection from the Type of Load on the Beam and Other Factors Significantly Influencing the Magnitude of the Horizontal Shear Force

Lecturer

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Abstract

The beam-column connection is the main element in frame structures. It is particularly vulnerable to cyclic lateral loads such as earthquakes. The main reason for this is the occurrence of shear forces. The main components of this force are the forces that are transmitted from the beam to the column. A good knowledge of these forces will allow the safe and accurate dimensioning of frame joints. In current codes of differently countries, beam forces are determined capacitively, based on the longitudinal reinforcing bars passing through the beam-column connection. However, this method does not take into account the involvement of the concrete section. Furthermore, this method does not allow the forces transmitted from the beam to the column to be determined on the basis of the applied load. Experimental studies conducted over the past few decades have shown the significant contribution of these two factors to the shear force. Analytical solutions of beams of frame construction subjected to different types of loads provide an explanation to the issue of the significant influence of load and strength of concrete. Numerical results obtained from the analytical studies will be shown and conclusions will be drawn supporting the experimental observations from the literature.

Lecturer

Albena Doicheva is Associate Professor of the Technical Mechanics Department at the University of Architecture, Civil Engineering and Geodesy, Sofia, Bulgaria.

She held a post-doc position at the University of Tokyo for one year. There she studied the reinforced concrete beam-column connection. Her research interests are in the field of off-center supported beams, dynamics of structures, engineering mechanics. She is the author and co-author of over 40 publications and 3 monographs on the listed topics and 6 textbooks and manuals about solid mechanics and strength of materials. She reviewed about 50 articles for MDPI.

Organizer

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