

عنوان مقاله:

NONLINEAR BEHAVIOUR OF SUSPENDED ZIPPER BRACED FRAMES

محل انتشار:

ششمین کنفرانس بین المللی زلزله شناسی و مهندسی زلزله (سال: 1390)

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خلاصه مقاله:

This study investigates efficiency of one of the lateral load resisting systems known as suspended zipper braced frame. Chevron bracing system is prone to buckling of first story compression brace while the tension member is still at its linear stage of axial behaviour when the frame is imposed with lateral load. This phenomenon produces an unbalanced vertical force imposed to the top beam leading to concentration of story drifts in one story. Zipper is a member which delivers this force to upper braces and makes them help the first story braces in resisting lateral displacement leading to distributing of drifts over the height. The problem of this system is simultaneous buckling of all compression braces. Suspended zipper frame is the same zipper frame but with strong members in the last story resulting in further ductility of the frame. In this paper the suspended zipper frame is compared with equivalent chevron braces in 3-9 and 20 story frames in terms of ductility and weight of the frame. This comparison indicates more ductility of the suspended zipper bracing system in all models and its less weight in 3 and 9 story models.

کلمات کلیدی:

Suspended Zipper braced frame, Ductility, Steel weight, Chevron braced frame

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