

# Seismic Damages of a Hotel Lobby with Steel Space Frame Structure in the 2017 Jiuzhaigou Ms.7.0 Earthquake

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**Abstract.** On August 8, 2017, 4 of totally 25 deaths were caused in a local hotel in the Ms.7.0 earthquake in the famous world natural heritage resort Jiuzhaigou area, north of Sichuan province, west of China. Unfortunately, the 4 deaths were all killed by the falling debris of architectural decorative non-structural components in the hotel lobby building, and its' independently constructed affiliate buildings inside and outside of the lobby, while the main structures of the buildings were basically intact during the earthquake. Overall, more than ten different kind of buildings composes the hotel complex, mostly suffered only very light damage, but the damage situation in the lobby buildings was quite different with other buildings. Almost all non-structural components such as ceilings, glass curtain walls and the glass panels of the roofs of the single-story hotel lobby with steel space frame structure, as well as the exterior decorative heavy stone-pieces cover of the RC frames of the affiliate sub-buildings in and out of the lobby were seriously damaged and fallout. Based on the reconnaissance to the seismic damage of the hotel lobby buildings by the authors 2 weeks after the earthquake, the damage patterns of the non-structural components as well as the damage causes are summarised and explained deliberately in this paper.

**Keywords:** Jiuzhaigou earthquake, Seismic damage, Non-structural components, Glass curtain wall

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