

Mega-city above a Hidden Active Fault -Displacement based Disasters in Osaka by the Uemachi-Fault -

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SUMMARY

Osaka is the western center of Japan and has been expected to act as the emergency function when Tokyo becomes malfunctioning due to any great disaster.

Uemachi fault has been identified as an active fault and the strong ground motions have been estimated for damage estimation as well as structural design in the area. However the surface ground deformations and their effects are not well taken into consideration into the framework of disaster mitigation program.

When the Uemachi fault is to move, the displacement is expected about 4m in reverse mode that results in subsidence of 2m in the west of the fault and upheaval of 2m in the east of the fault. Since rather thick surface soil layers covered upon base rock results in rather gentle displacement at the ground surface.

The displacement will cause not vertical displacement with some inclination as well as curvatures along a line perpendicular to the fault.

Structures upon the ground surface may incline caused by ground movement. The maximum dip angle is expected as large as 1% near the center of the fault.

Such lifelines of subway, expressway, water supply pipe, rail lines that exist above the Uemachi-Fault are expected to deform with curvatures caused by the faults.

These displacement based disasters in Osaka have been out of discussions for unknown reasons and should be considered as the one of the major disaster of Characteristics to Osaka Region.