High rises and earth subsidence

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Abstract

Skyscrapers are synonymous with mega cities throughout the world, accompanied with which is earth subsidence. High rises are larger in inertia, and decelerate and accelerate at slower speeds than smaller buildings. The slower deceleration can lead to drift along the direction of Earth's self-rotation and revolution, resulting in the appearance of minute cracks to the west of the skyscrapers and thus earth subsidence.

Keywords

Skyscrapers; earth subsidence; decelerate; drift

Skyscrapers are the landmarks of an industrialized society. They keep shaping the skylines of modern cities. Coming with that is earth subsidence. In order to explore the underlying mechanism, we need to turn to the emerging theory of seismic activities (1-5). Large mass such as the Tibetan Plateau possesses large inertia, and is subjected to the influence of solar and lunar gravitational pulls. The slower deceleration of the Tibetan Plateau results in the northeastward drift since the Earth self-rotates and orbits around the Sun.

High rises are larger in inertia, and decelerate and accelerate more slowly than smaller buildings. The slower deceleration can lead to drift along the directions of Earth's self-rotation as well as revolution, resulting in the appearance of minute cracks to the west of the skyscrapers and thus earth subsidence. To address this problem, high rises with approximately equal heights and equal inertia can be constructed along the direction of drift in a region, as skyscrapers will drift at similar speed and in similar direction to avoid cracks.

Conflict of interest

None declared.

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