

Keynote Paper

Effects of configurations of super-tall buildings on aerodynamic and wind-environmental characteristics

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ABSTRACT

To investigate the aerodynamic response and pedestrian level wind characteristics of super-tall buildings with unconventional configurations, a series of wind-tunnel tests were carried out around 40 super-tall building models, including basic models, tapered models, corner modified models, opening models, helical models, tilted models, composite models, triangular models, and polygonal models. The findings will provide the structural designer with comprehensive wind tunnel test data that can be used in the preliminary design stage, and will be helpful in evaluating the most effective structural shape in wind-resistant design for tall buildings with various aerodynamic modifications. The characteristics of pedestrian-level wind are significantly affected by some important parameters such as corner modifications, twist angle of helical models, number of sides of building plan, etc.

REFERENCES

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