Research regarding rationalization of wind resistant design method for long-span bridge

[Point]

For wind resistant examination of bridges, grasping the wind characteristics at bridge sites, and response characteristics of bridge to wind are necessary. In the past, characteristics of wind at local terrains weren't grasped, and also, anti-wind response characteristics had been estimated by wind tunnel test, however, taking long time and much cost. For this reason, grasping characteristics of wind at local terrains, as well as by development of analytic anti-wind response characteristics estimation method, making wind resistant bridge design more rational were necessary. In this research, objecting valleys and alluvial fans as local terrains, we grasped wind characteristics of geological formation by wind tunnel test and numerical analysis. Moreover, objecting flutter of long-span suspension bridges, we performed comparison analysis with wind tunnel test result of double-box girder type ultra long-span suspension bridges, and verified that the both results are almost the same . In addition, we proposed a simple flutter estimation method.

Keyword airflow characteristics, flutter estimation