Editorial
Volume 7:5, 2021

Journal of Steel Structures & Construction

ISSN: 2472-0437 Open Access

Pingtan Strait Bridge Site Wave Characteristics and Spectruma

Haeifeng He*

Appraisal Center for Environment and Engineering, University of Technology, China

Introduction

The sea-crossing bridges that connect the two sides of the strait are becoming increasingly important for economic development, transportation, and trade as the economy grows and trade expands. The Hong Kong-Zhuhai-Macao Bridge, which was recently built in China, connects Hong Kong, Zhuhai, and Macao, cutting travel time between the three cities in half, and is critical to the economic development of Hong Kong, Macao, and the Pearl River Delta's West Bank. The long span of such sea-crossing bridges typically ranges from a few kilometres to tens of kilometres, and they are frequently positioned near the beach.

Unlike land-based bridges, research has demonstrated that the wave force on bridges is a crucial control load that cannot be overlooked. One of the most important approaches for determining wave forces on the substructure and superstructure of a sea-crossing bridge in maritime conditions is wave spectrum analysis. Wave spectra are often utilised in measuring the reactions of ocean structures because of their capacity to reflect the statistical variability of ocean waves. For the design and construction of sea-crossing bridges, prepared wave spectra in the relevant bridge site region are required.

A single parameter spectrum known as the P-M spectrum was created using data collected in the northeast Atlantic Ocean. This spectrum is excellent for describing fully grown ocean waves in the infinite wind area of the outer sea. The JONSWAP spectrum was created by multiplying a peak enhancement factor based on a total of 2500 observed spectra with the P-M spectrum . Because of its ability to reflect energy exchanges, the JONSWAP spectrum for a developing sea often includes high and sharp peaks, and it was used in wave prediction.

According to the North Atlantic Ocean observed spectra, Ochi and Hubble (1976) presented a six-parameter wave spectrum to represent distinct spectral forms. To better depict the two-peaks spectrum and varied spectral shapes in different sea conditions, this sixparameter spectrum is superimposed by two three-parameter sections. The nearshore sea condition, however, cannot be represented solely by those spectral forms due to changes in seabed structure and the presence of islands. The Haitan Strait, which is surrounded by many small islands, is home to the sea-crossing bridge. Furthermore, the significant changes in the geography of the seabed and wind field in these nearshore areas make assessing the wave forces on the bridge structure challenging, which raises the construction and protection risks.

Based on a set of measured wave spectra, this work seeks to suggest a suitable wave spectrum model for the 6 #platforms of the bridge site area. A good wave spectrum model can aid in properly calculating the wave force on the bridge structure and improving the accuracy and protection of the construction control. J Steel Struct Constr, an open access journal ISSN: 2472-0437 Volume 7 • Issue 5

• 1000154 The Pingtan Strait Bridge, which is now under construction, is used as an example in this study. The bridge, which spans 1634.0 metres and has a maximum water depth of 43.0 metres, is located in the eastern section of China's Fujian Province. The bridge will be built near the Pingtan Strait's north exit, where the seabed topography is complex, with several islands and reefs.

How to cite this article: He, Haeifeng. "Pingtan Strait Bridge Site Wave Characteristics and Spectruma." J Steel Struct Const7 (2021) : 5

***Corresponding author:** *Appraisal Center for Environment and Engineering, University of Technology, China; E-mail:haeifeng@fengii.com*

Received: May 03, 2021; Accepted: May 21, 2021; **Published**: May 30, 2021