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PROCEEDINGS

Field Observation and Numerical Simulation of Extreme Met-Ocean Conditions: A Case Study of Typhoon Events in South China Sea

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ABSTRACT

Site measurement is essential to the meteorological and oceanographic parameters of offshore wind farms. A floating lidar measurement buoy was deployed at a Qingzhou VI wind farm where is 45-80 km away from Guangdong coast. The field observation including wind and wave data start from March, 2021.The lidar wind data is compared and calibrated with the fixed wind tower data for three months, the accuracy meets the standard of stadge3 carbon trust. In this study, all these data are used to recalibrate for the met-ocean model to relies extreme conditions, such as Typhoon Kompasu(2118) and Typhoon Chaba(2203) in recent years. Various methods including Yong & Sobey (Holland B) and CMA-GD are used to simulate Typhoon events. Meanwhile, extreme wave condition is simulated by well-calibrated spectral wave model (MIKE 21 SW). A case study is presented in this paper to demonstrate the importance for the extreme met-ocean conditions for the offshore wind turbines.

KEYWORDS

Floating lidar buoy; typhoon simulation; field observation; offshore wind farm

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