

환경변수가 자켓 하부구조물 해상 풍력시스템 거동에 미치는 영향

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Effects of environmental parameters for offshore wind turbine system with jacket support structure

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This study investigates the effects of Pierson-Moskowitz, Jonswap spectrum that are typical irregular wave spectrums for wind turbine system with jacket support structure. Also various offshore environmental parameters based on Korean local condition were used in our study. The loads acting on the system was considered by referring to the Design Load Case from IEC guide line. And improved von Karman model was used as a turbulence model.

As a result, various significant wave height and peak spectral period cause noticeable difference of extreme and fatigue loads prediction.

Key words : Significant wave height(유의 파고), Peak spectral period(파주기)

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Model Test of a TLP Type of Floating Offshore Wind Turbine, Part II

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A large number of offshore wind turbines with fixed foundations have been installed in water depths up to 30 meters supporting 3-5MW wind turbines. Some floating platform concepts of offshore wind turbines were designed to be suitable for deployment in water depths greater than 60 meters. However the optimal design of this system in water depth 50 meters remains unknown. In this paper, a 5-MW wind turbine located on a TLP type platform was suggested for installation in this water depth. It is moored by a taut mooring line. For controlling the wind turbine always be operated at the upwind direction, one yaw controlling was attached at the tower. To study motion characteristics of this platform, a model was built with a 1/128 scale ratio. The model test was carried out in various conditions, including waves, winds and rotating rotor effect in the Ocean Engineering Wide Tank of the University Of Ulsan (UOU). The characteristic motions of the TLP platform were captured and the effective RAOs were obtained.

Key words : Floating Offshore Wind Turbine(부유식 해상풍력발전시스템), Model test(모형시험), Effective RAO(유효 응답함수), TLP, 5-MW wind turbine

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