체결형상을 고려한 해저케이블 보호공법에 관한 실험 Experiments on the Submarine Cable Protection Methods Considering the Connection Type

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Abstract

In this study attempted to evaluate the stability of the protection methods by examining hydraulic characteristics of the area around the point in which marine cable protector is installed such as surf zone occurrence point of shore-end submarine cables suitable for coastal marine environmental conditions, flow rate t the tope of the protector and maximum wave height, and to provide basic data for the selection of the optimal protection method. In performing hydraulic model experiments, the topography of submarine cable installation location was reproduced in 2-D sectional channel, and models appropriate for experimental scale and similitude law were produced and installed for each condition of submarine cables and protectors. Since the topography and submarine cable protectors were reproduced and installed in 2-D sectional channel, the exact reproduction of surf and transformation in shallow water zone was possible, and thus the physical properties could be clearly analyzed. For stability review, an experiment to examine the stability was conducted using a wave maker with 50-year frequency design waves as target, and wave height and cycles were applied based on the approximate lowest low water level(Approx. L.L.W), which is the most dangerous in submarine cable protection methods. As for experimental time, typhoon passing time in summer (about 3 hours) was applied, and wave patterns and deviation ratio of the submarine cable protector were investigated after making irregular waves corresponding to design waves. In addition, current meter and wave height meter were installed at the installation location of the submarine cable protector, and the flow rates and wave height at the top of the protector were measured and analyzed to review hydraulic properties.

Key word : Submarine Cable, Protection Method, Offshore wind farm

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