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ANALYSIS OF OFFSHORE STRUCTURES FOR WIND TURBINES AND OIL&GAS USING XSEA SOFTWARE

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The powerful and efficient finite element software, XSEA is developed for the solution of offshore structural analysis. The user-friendly graphical interface is developed using the pre/post processor software, GiD. In order to calculate the wave load based on the frame element, shell element and solid element, the Morrison equation is used in XSEA software. Thus, XSEA can be used for the analysis of offshore framed and concrete shell structures. Moreover, to apply for offshore wind turbines, the combination between XSEA and FAST program (NREL, USA) are developed and applied for the load combination. The current version of XSEA can solve the various design problems of offshore structures such as general static, dynamic, fatigue lifting, transportation analysis and design code checking. XSEA which has been developed at Konkuk University in Korea is the result of extensive research and development of the finite element program FINAS, which was originally developed in Imperial College, London.

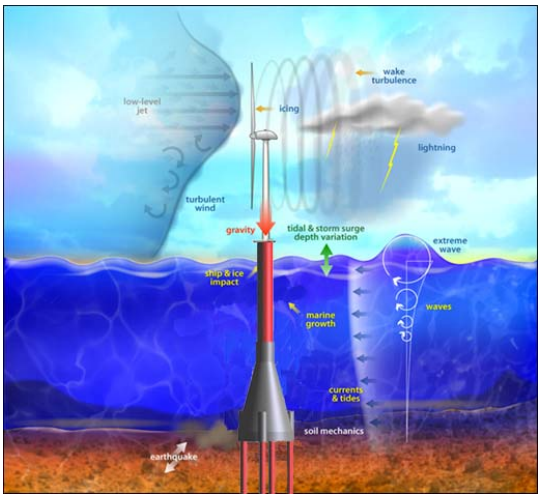

Figure: The environmetal loading on MCF (Multi-pile Concrete Structures)