

Simulating Metocean Data

HPC-Competence Center

ICHEC is the national High-Performance Computing (HPC) in Ireland and is a centre of domain, systems and software expertise that provides high performance software solutions to academia, industry (SMEs and MNCs) and state bodies, through partnership, knowledge transfer, project delivery and service provision. ICHEC operates the national HPC service providing compute resources and software expertise for the research communities across all the main science disciplines through collaborative partnerships and programmes of education and outreach.



Enterprise

TechWorks Marine is a provider of oceanographic equipment and world-class solutions to monitor the marine environment, working in the private and public sectors both in Ireland and overseas. The Company provides products and services to a range of sectors including offshore renewable energy, coastal engineering, ports and harbours, oil and gas, aquaculture, water and utilities, academia, research and statutory monitoring. And specialises in the provision of integrated real-time monitoring platforms based around our range of TechWorks Marine Black Box (TMBB) data acquisition and transmission systems. TechWorks Marine has been providing services to these sectors for the last 12 years in both Ireland and overseas.



How HPC makes the difference

An accurate understanding of metocean data is essential to the success of all marine renewable projects. This information will serve to characterise the available resource for energy yield, the design requirements for survivability of the project and the strategy for maintenance and accessibility. This data is necessary throughout the life cycle of a renewable energy projects for both site management and device validation. High quality oceanographic surveys are often needed to provide a reliable basis for understanding and reporting local conditions, developing cost effective coastal engineering design criteria, and providing databases for the calibration and verification of numerical models. The main purpose of this collaboration is to flexible facilitate access to ICHEC's

infrastructure and domain expertise in optimising NOAA WaveWatch3 to enable Techworks Marine to undertake a realistic and real-time simulates of ocean waves. The initial benchmark tests provided a significant speed in producing the results. The collaboration is on going between the two partners, and look to expand in the near future.

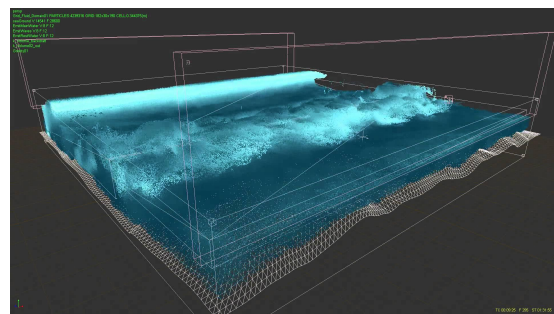


Fig.1: Sample of wave simulation

