ID40- WAVE ENERGY FLUX VECTORIAL PREDICTION AT THREE COASTAL BUOYS IN SPAIN

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Abstract. Harvesting energy from the ocean waves involves not only the design of efficient and economically feasible propotypes but also a knowledge of the resource from which energy is to be extracted. The first operational wave farms are already putting electricty into our grids but as with other types of renewable energy, the electricity obtained from waves has the problem of intermittency, Having a knowledge of the energy waves will hold a few hours ahead can contribute to a better management of the electricity grid. In this work, three types of statistical models have been used to create up to 24h forecasts of the zonal and meridional components of the wave energy flux levels at three directional buoys located near the coast in the Bay of Biscay. Model's performance has been compared at a 95% confidence level with the most simple prediction (persistence of levels) and also with the forecasts provided by the physics-based WAM model at the nearest gridpoint. The results indicate that for forecasting horizons between 3 and roughly 16 hours ahead, among the statistical models those built on random forests outperform the rest, including WAM and persistence.

Keywords. Wave Energy Flux, Forecasting, Random forest, Machine learning, Fluid mechanics

ID41- DEVELOPMENT A PRESSURE DIFERENCE ANCHOR SYSTEM IN A ROV

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A differential pressure anchor system has been designed and implemented in order to improve the capacity of an autonomous underwater platform to temporarily anchor to any structure, regardless of its material or shape . This project has been developed in the framework of the A-TEMPO initiative promoted by the University of A Coruña and the European Regional Development Fund (ERDF).

This device can be easily adapted to different gripping levels and shapes while keeping the same design. A larger number of grippers may be installed, and the size of the device may be modified so that the clamping force is suitable for a specific work environment (e.g. the varying power of ocean currents).

ID42- SIDESCANSONAR RAW DATA INTEGRATION IN THE SOFTWARE OF AN UNDERWATER VEHICLE

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Typically, the data collected by the SideScanSonar are obtained through programs provided by the manufacturers. This facilitates the rapid implementation of the equipment, but forced to rely on proprietary software companies, as well as the functionality they provide. It is difficult to use own software to interact with the computer in real time.

CETMAR, in collaboration with the UVIGO, has developed a specific software in Python that interacts with the Tritech SideScanSonar and enables the use of device without installing proprietary software.

You can get real-time data and process SideScan with own tools (gaussian filters, resolution changes ..) in real time, without waiting to export a file with a proprietary program (if that is possible. ..)

This software is designed using the concept of client/server, where a daemon program interacting with SideScan and clients connect to it and get the data. Communication is implemented by sockets, and clients may be within the same computer, (ROV,AUV, Glider) such as connecting a remote client via TCP or UDP. This design allows the use the SideScan from different programs simultaneously, both internal control software or remote monitoring software.