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A machine learning approach to achieve accurate time series forecast of sea-wave conditions

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Reliable forecast of environmental variables is fundamental in managing risk associated with hazard scenarios. In this work, we use state of the art machine learning algorithms to build forecasting models and to get accurate estimation of sea wave conditions. We exploit multivariate time series of environmental variables, extracted either from hindcast database (provided by MeteOcean Group at DICCA) or observed data from sparse buoys. In this way, future values of sea wave height can be predicted in order to evaluate the risk associated with incoming scenarios. The aim is to provide new forecasting tools representing an alternative to physically based models which have higher computational cost.