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Journal: Energies (https://www.mdpi.com/journal/energies) (ISSN 1996-1073)

Manuscript ID: energies-1023087

Type: Article

Number of Pages: 1

Title: Building Suitable Datasets for Soft Computing and Machine Learning Techniques from Meteorological Data Integration: A case study for predicting significant wave height

Authors: Antonio Gómez-Orellana * , Juan Carlos Fernández * , Manuel Dorado-Moreno * , Pedro Antonio Gutiérrez * , César Hervás-Martínez *

Abstract: Meteorological data are extensively used to perform environmental learning. Soft Computing (SC) and Machine Learning (ML) techniques, a valuable support in many research areas, require datasets containing information related to the topic under study, which are not always available in an appropriate format, and its preparation and pre-processing implies a lot of time and effort by the researchers. This paper presents a novel software tool with an user-friendly GUI to create datasets by means of management and data integration of meteorological observations from two well-known sources of information: the National Data Buoy Center and the National Centers for Environmental Prediction and for Atmospheric Research Reanalysis Project. Such datasets can be created using buoys and reanalysis data by customisable procedures, in terms of predictive and objective variables and temporal resolution. These datasets can be used by SC and ML methodologies for prediction tasks (classification or regression) that support improvement of sustainability energy production, design of production systems as WECs or environmental modelling, among others.

Review Report Form

English language and style:
( ) Extensive editing of English language and style required
( ) Moderate English changes required
(x) English language and style are fine/minor spell check required
( ) I don't feel qualified to judge about the English language and style

	Yes	Can be improved	Must be improved	Not applicable
Does the introduction provide sufficient background and include all relevant references?	(x)	( )	( )	

TOP

Is the research design appropriate?	( )	(x)	( )	( )
Are the methods adequately described?	( )	(x)	( )	( )
Are the results clearly presented?	( )	(x)	( )	( )
Are the conclusions supported by the results?	( )	(x)	( )	( )

Comments and Suggestions for Authors

The Authors present a new open source tool for the creation of datasets integrated by meteorological variables from two sources of information. Basically, a user-friendly software has been developed and described on the basis of pivotal parameters, carefully selected for the specific study of the wave height in the Gulf of Alaska. The statistical model can be in principle extended to other meteorological measurements and monitoring.

This study is very technical and of interest for a specific audience. By the way, I don't see any link between the topic of the manuscript and the journal Energies.

The software developed it is clearly presented as useful tool for meteorological application and no application to energy saving, production, conversion or similar it is presented.

Thus, I recommend to submit the menuscript to a more specialized journal.

Submission Date 17 November 2020

Date of this review 20 Nov 2020 09:44:42