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Quantification of the impacts of tropical cyclones on the coasts of the Gulf of Mexico, the Western Caribbean Sea and on the urban, semi-urban and rural localities of Mexico

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The countries in the Intra-Americas Sea, particularly those located in the Gulf of Mexico and the Caribbean Sea, are exposed to the impacts of tropical cyclones that cause important human and economic losses to the region. The quantification of these impacts might be used as a preventive tool for risk reduction if it is used to evaluate the territory exposed to natural hazards and if it is made available in a friendly and simple way to concerned authorities and vulnerable people. Based on data of 2,117 tropical cyclones trajectories downloaded from the International Best Track Archive for Climate Stewardship for the period of June 1851 to November 2015 in the North Atlantic Basin, influence ratios were established for each trajectory: 150 km for wind and 350 km for rain, according to the publication by D.R. Chavas and K.A. Emanuel: "*A QuikSCAT climatology of tropical cyclone size*". The number of strikes of the influence ratios overlapped on the coastline was counted. Maps were created with the total number of impacts of tropical cyclones on the coasts of countries located in the Gulf of Mexico and Western Caribbean Sea. In the case of the 249,122 rural, 50,821 semi-urban and 4,562 urban localities of México, a similar process to that done for the coastline was completed. Maps were also created with the number of impacts of tropical cyclones on more than 3,000 localities.

Biography

Agustin Fernandez Eguiarte is responsible for the Informatics Unit for the Atmospheric and Environmental Sciences (UNIATMOS) of the Centro de Ciencias de la Atmósfera of UNAM and is a Geomatics Professor at the Facultad de Ingeniería of UNAM. In September 2014, he received the international Latin America Geospatial World Excellence Award granted by Geospatial Media and Communications. His research interests include, processing and quality control of continental and oceanic climatic-environmental data, GIS, marine and continental cartography, data bases, geospatial repositories and metadata, open data and interoperability and map servers on the internet.

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