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Wind storm research at the Helmholtz Centre Geesthacht - long term changes over the Pacific

For more than 10 years now wind storm research has been conducted at the Institute of Coastal Research of the Helmholtz Centre Geesthacht (HZG), Germany. In the focus of interest were any changes of meso-scale storm systems over the recent decades and in an anticipated warmed future atmosphere. To study wind storms high space and time resolution long term data-sets are produced by dynamically downscaling coarser global model and reanalysis data. At HZG all maritime areas of the world are subject of research, but latest studies were undertaken for the Mediterranean Sea, for the polar oceans of the Atlantic and Pacific and for the tropical Pacific. We want to present methods and results of our recent research on past and future changes and put a special emphasis on the changes over the Pacific.