High Impact Weather Recognition through HOAPS-II

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One major uncertainty for quantitative precipitation forecasts in Europe is due to (mesoscale) high impact weather (HIW) events, with substantial damage by heavy rain, hail and gale wind force, which form over the North Atlantic and are transported and sometimes strengthened over the European continent. These events are often not or not timely enough predicted by numerical weather prediction models (e.g. storm "Lothar" in December 1999) as they escape the routine surface and satellite based observation systems. Preliminary analysis of the intensively validated precipitation fields from the Hamburg Ocean Atmosphere Parameters and Fluxes from Satellite Version II (HOAPS-II) dataset will be presented to demonstrate the possibility of recognizing and tracking such HIW systems from their source region over the ocean to the coastlines of Europe. This dataset is mainly based upon SSM/I (Special Sensor Microwave / Imager) data and is split into a climatological part containing gridded fields of pentad and monthly mean data (HOAPS-G) for statistical analysis of the atmospheric water cycle as well as a satellite scan based part (HOAPS-S) where individual case studies can be investigated twice a day over the global oceans for the years 1987 until the recent dates.