C-CORE 1.19 Hail

Hail

Challenge

Challenge ID	C-CORE_OFF1.19
Title	**Hail**
Challenge originator:	
General Description	
What data/products do you use?	Historical surface-based hail observations are available via ICOADS. Near real-time observations of hail are available from many sources including NOAA (NWSTG), NOAA (MADIS), UCAR, and numerous other data distribution centers.
When do you use this kind of dataset?	Observations of large hail events can be used by the O&G industry to assess the risk of these events happening. Large hail can be disruptive to all operations on deck, damage equipment etc. Historical data are important to assess risk of operations in these areas, frequency of occurrence etc., but are mostly used as input to improve operational forecasting. The data set is used to assist in (a) qualifying and quantifying the means and extremes of hail and (b) managing risks related to hail, safeguarding lives, protecting assets, and conducting operations. The data set is used to assess operability in the area, to reduce risk when designing structures and operations, to design strategies to avoid severe conditions.
What are your actual limitations and do you have a work around?	The temporal and spatial resolutions of surface-based observations significantly limit the identification of hail events in the offshore environment. Unless ships measure and report hail, the parameter is not readily available for analysis over vast areas of the ocean.
Needs and expectations on EO data	EO is used for this today, to spot convective cells and try to assess they movement. However, it is hard to assess the wind speed of each individual cell based on satellite data. Also, the direction of movement for each individual cell is often hard to predict. This leads to unnecessary downtime because of warnings. Specific need: Continuous time series of 10m wind speed data in the offshore environment. Specific need: More surface-based observations that verify the existence of hail in the offshore environment.
Challenge classification	
Pre license	1
Exp.	2
Dev.	1
Prod.	2
Decom.	1
Geographic context/ restrictions	Applies to all six Areas of interest. Seasonality: Applies to all seasons.

Topographic classification / Offshore classification	Ocean
Activity impacted /concerned	
Technology Urgency	Short term (2-5 years)
Information requirements	
Update frequency	Real-time or near real-time observations are available sub-hourly and less frequently. Historical observations are generally updated once per month, for the previous month.
Temporal resolution	At least hourly. Available: Sub-hourly and less frequently. .
Spatial resolution	4-2 km Available: Surface-based observations are available based on the location of the ship observation, therefore the spatial resolution varies greatly.
Data quality	The selected sources in this document are selected because they are known to have sufficient quality (after some work arounds and adaptations). In general separate indepth verification studies has to be made for each source planned to be used for analysis, and the analysis has to be repeated for each geographical area (since sources might be of sufficient quality in one area but not another).
Data Coverage and extent	Regional
Example format	Surface-bases observation: text, CSV and/or netCDF
Timeliness	Real- time or near-real time
Existing standards	NA

Relevant products

Content by label

There is no content with the specified labels