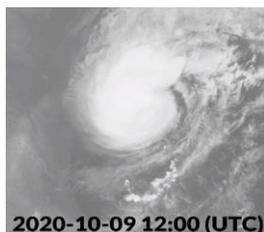


**Tropical Storm Tracker** provides state-of-the-art information about tropical cyclones, to first responders, governments and organization in exposed areas, to Insurance Linked Security funds (ILS), insurance and re-insurance companies as well as to insurance brokers. The unique data is used for instance to mitigate Tropical Cyclone related risk, to mobilize personnel, to have an updated understanding of loss expectations and to identify possible biases in used catastrophe models.

**The Service:** The Tropical Storm Tracker is a SaaS software tool based on artificial intelligence; on computer vision and on deep -, machine learning. The in-house developed proprietary algorithms benefit of satellite images, weather advisories, ocean data, atmospheric data and on latest machine learning technologies training with vast array of relevant historical data.

As an example, a modern convolutional neural network architecture works on each incoming satellite image while another neural network assimilates other available data sources: numerical weather prediction, reconnaissance data etc. The nowcast algorithm is then trained against approximately 600.000 satellite images (infra red, visual, seasurface temperature and rainrate data) from 2002 onwards. As the Nowcasts are updated with 10-15 minutes intervals, or as soon as any new data is available, sudden intensification, de-intensifications or changed trajectories are identified faster.



*Eye disappears from satellite image*

### Tropical Storm Tracker Features:

- Proprietary machine learning algorithms using:
  - Satellite images
  - Weather advisories
  - Atmospheric data
  - Ocean data

### Tropical Storm Tracker SaaS includes:

- Nowcast
- Short-term Forecast
- Seasonal Forecast
- Historical Catalogue
- Climate change report

### Tropical Storm Tracker Benefits:

- Update rate 10-15 minutes vs. 3-6hrs
- Resolution of <1km vs. 6km
- Nowcast accuracy
- Short-term forecast 0-24h to 5 days
- Global solution
- In-house seasonal forecast

**Offering:** The Tropical Storm Tracker SaaS service includes following solutions:

- Nowcasts of the intensity of active tropical storms
- Short-term forecasts (0-24h to 5 days forecasts)
- Seasonal forecasts with event and landfall probabilities
- Historical Catalogue of past tropical storms
- Tailored solutions based on customer-specific needs

All solutions are and will be developed together with end users to ensure perfect fit and continued progress according to users' defined needs.

**Global Coverage:** The Tropical Storm Tracker is not limited to only Hurricanes over the Atlantic and the Northeast Pacific ocean, but it works equally well for Typhoons over the Northwest Pacific Ocean and for Cyclones over South Pacific and Indian Oceans.

**Data availability:** Tropical Storm insight information is provided via an intuitive user interface, via a tailored API or as a direct data download. The web application is available using main browsers and the SaaS solution doesn't require any installations or maintenance work from the IT department. This is all managed by Skyfora.

# Comparison Data

Skyfora's nowcast predictions are compared to best track windspeeds from IBTrACS and official advisories from NHC (Atlantic) and JTWC (Western Pacific) in the figures below.

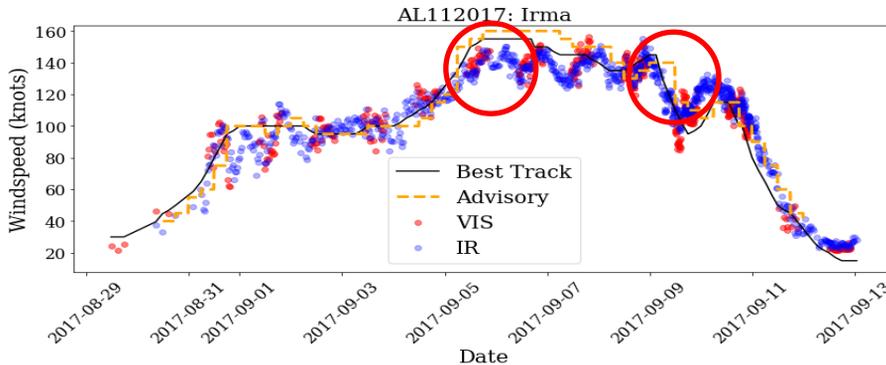


Figure 1. Comparison of windspeed nowcast predictions against post-season best track data and official NHC advisories for Hurricane Irma (2017). VIS and IR correspond to predictions using the visible light and infrared satellite image spectrums as the main channel, respectively.

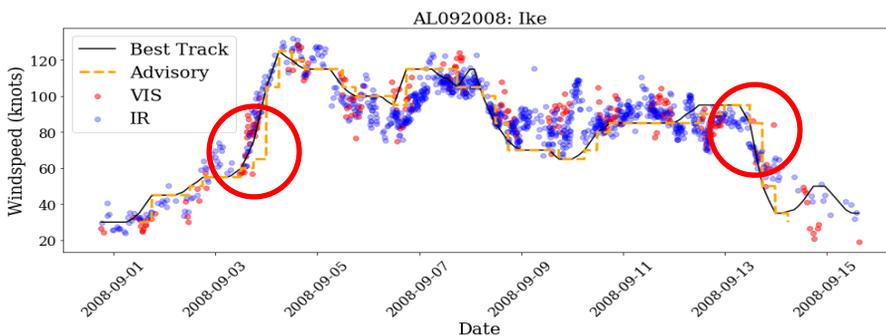


Figure 2. As in Figure 1 but for Hurricane Ike (2008).

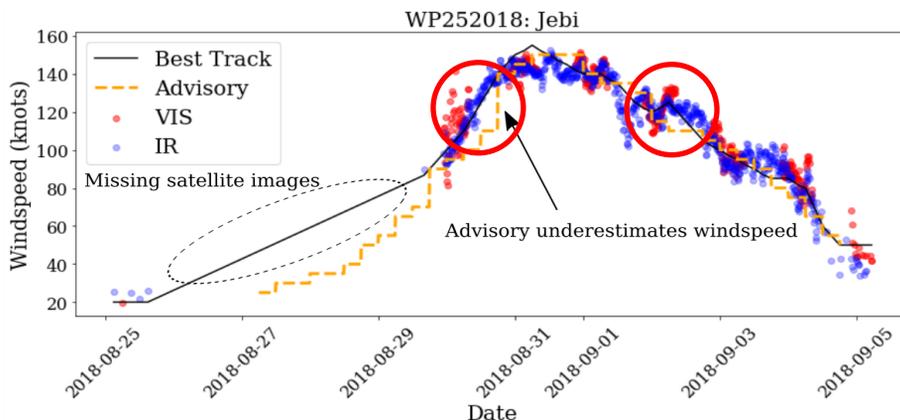


Figure 3. As in Figure 1 but for Typhoon Jebi (2018) and using JTWC advisories. Predictions could not be generated for the date range indicated in the figure due to missing satellite images in the historical archive. The best track data is linearly interpolated over the missing dates to emphasize missing data and this linear segment therefore does not represent the actual best track data over that date range. This issue does not affect operational use as own images are generated and stored.