SEASONAL HURRICANE PREDICTIONS

Forecaster's Guide

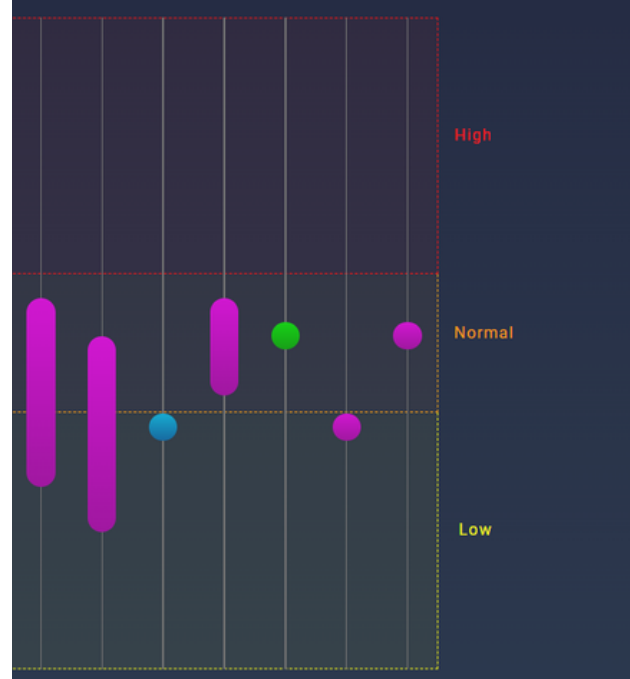*2023 edition*

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

In partnership with
AXA

COLORADO STATE UNIVERSITY

About

Seasonal Hurricane Predictions, developed by the Barcelona Supercomputing Center (BSC) and Colorado State University (CSU), is a portal that compiles **forecasts of seasonal Atlantic hurricanes** issued by a number of universities, private sector entities and government agencies. The portal has been created to provide a platform for these entities to make the forecasts available to the wider public. By checking the platform, interested individuals and organisations can track the evolution of seasonal hurricane forecasts and how they compare with real-time hurricane activity.

Seasonal Hurricane Predictions is sponsored by the global re/insurer AXA XL. The website was named "Site of the Day" in www.designnominees.com and nominated for the Lloyd's Market Innovation Award in 2016.

This Forecaster's Guide provides information on how to register to the platform, how to submit your initial forecasts and provide subsequent updates, and how the forecasts are displayed on the portal.

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LIABILITY STATEMENT

Who can submit forecasts?

Universities, government agencies and private institutions that regularly issue seasonal predictions for Atlantic hurricane activity are welcome to join the platform and submit their forecasts.

If you are interested in submitting your forecasts, please contact info-hurricanes@bsc.es and provide the following information:

- Name of the forecast entity
- Name and e-mail address of the contact person
- Logo of your institution
- Type of institution (*University, Government Agency or Private entity*)
- URL of the forecast entity (either the institutional link or specific to the forecast project)
- Brief description of the forecast methodology (*see examples in the Seasonal Predictions page*)
- Model type (*Dynamical, Hybrid, Statistical or Machine Learning*)

How to submit your forecasts

Once we have received your information, you will be registered in the system and receive an e-mail that will allow you to establish a password to manage your account.

With your credentials, you can login and submit your prediction to the forecaster's section of the website. This can be accessed via the "Sign in" button in the main menu.

In order to submit your forecasts, please fill in the **Seasonal Predictions Submission form** that appears after signing in, and select "*Save*" at the end of the page. You can then sign out by clicking on your profile and "*Log out*" at the bottom left corner of the page.

Forecasts can be submitted to the platform from March to August. You can use the same form to provide updates to your forecast throughout the season.

Please note that the website is updated once every hour, so changes may not be displayed immediately. Only forecasts for the North Atlantic basin can be submitted to this platform. The type of organisation and model are already defined in your profile, and can be seen in the plot after submitting a forecast. If you wish to make any changes, encounter any problems or have any questions, please contact us at: info-hurricanes@bsc.es

First submission of the season

The platform displays tropical cyclone forecasts for the April-December period. To submit your first forecast for the season, please submit the **predicted mean, minimum and maximum value** for each of the variables:

- Hurricanes
- Named Storms
- Major Hurricanes
- Accumulated Cyclone Energy (ACE)

If you do not forecast a particular variable or your forecast does not include a range, please leave those boxes blank. Mean values should be added for all variables.

For each variable, predictions can be submitted for three periods throughout the year, by selecting the appropriate tab at the top of the form: *March-April*, *May-June*, and *July-August*.

Providing updates during the season

In order to submit forecast updates, please sign in and use the same form as before, and insert information in the appropriate tab at the top of the page (*March-April*, *May-June*, *July-August*).

Edit the form with the new predicted values in the box corresponding to the month in which your new prediction has been issued, and click on "*Save*" at the end of the page.

How forecasts are displayed

In the platform's home page, the average hurricane activity predicted for the season is displayed (April-December), as well as the number of hurricanes that have occurred to date.

A range with the minimum and maximum predicted number of hurricanes appears when hovering the mouse over the hurricane symbol.

The list on the left provides information on the historical average and the past annual Atlantic activity since the start of the geostationary satellite era in 1966.

You can click on each of the years to open a North Atlantic hurricane tracking chart from the National Oceanic and Atmospheric Administration (NOAA).

When scrolling down in the home page, a plot with the most recent forecasts submitted by each of the forecast entities appears.

The ranges for *high*, *normal* and *low* activity seasons are based on a 1981-2010 climatology. Predictions are displayed in different colors according to the type of forecast entity.

This plot also shows the average prediction and the number of hurricanes in the season to date. Additional information is available by hovering over the plot.

Example of home page from July 2023

Additional forecast information can be viewed by visiting the Seasonal Predictions page, found under the "Forecast" menu.

In this page, a number of forecast filters can be selected at the top. These include the forecast metric, which provides information on the number of forecasted hurricanes, named storms, major hurricanes and ACE.

Other filters include the type of model and organization submitting the forecast, as well

as the forecast release period (March-April, May-June and July-August).

Information on the forecasters submitting predictions can be accessed at the end of this page, or by visiting the Forecasters page found under the "About" menu.

In both the home page and Seasonal Predictions page, the plot can be downloaded as a PDF, and data (whole dataset) can be downloaded in ".csv" format.
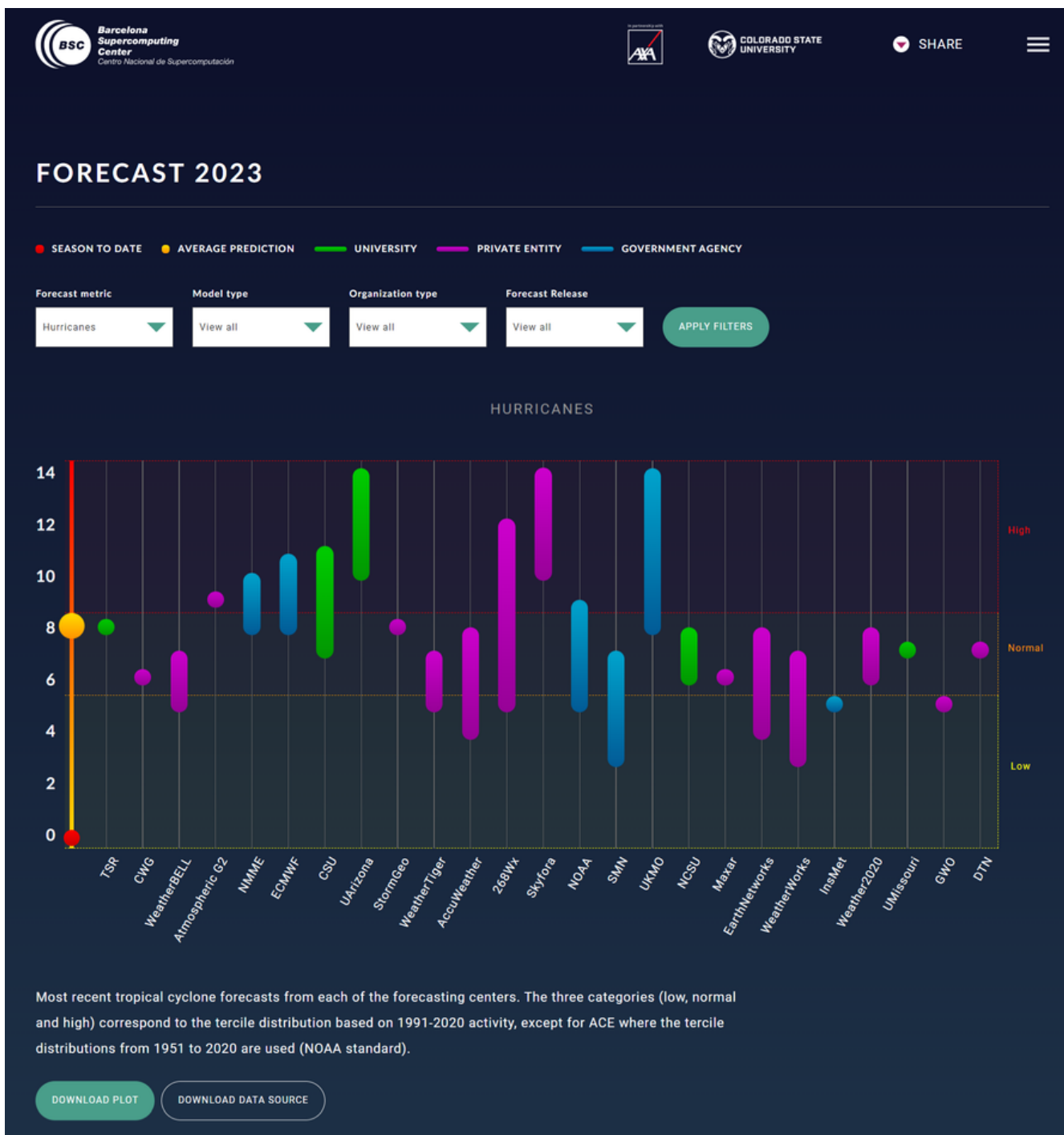
Example of Seasonal Predictions page from July 2023

Other information

Resources on hurricanes, climate factors and skill, as well as a glossary, can be found under the "Background information" menu.

The "About" menu includes further information on the platform, team, liability and forecasters.

How to cite the Seasonal Hurricane Predictions platform

BSC and CSU must be attributed as the source of information of the materials derived from the graphs and data available in the portal. The citation should mention the portal and give credit to BSC/CSU. A citation example is shown below:

Source: Seasonal Hurricane Predictions (www.seasonalhurricanepredictions.org), Barcelona Supercomputing Center (BSC) / Colorado State University (CSU). Accessed on [date].

Liability Statement

Seasonal predictions provide an estimate of the expected basin-wide hurricane activity, based on the current and projected state of the atmosphere/ocean system.

These models, while showing skill against various baseline measures, are not perfect and will fail in some years. It is impossible to predict if and when hurricanes will make landfall. Consequently, the predictions provided should not be used as a guideline for preparedness activities.

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