

Description of Forecast Error File Format

10 January 2012

This document describes the forecast error file format. This text file is designed to be easily imported into spreadsheet applications, such as Excel or (in particular) Kaleidagraph. Contents are as follows:

Section 1: Header information

Line 1: Basin and period of record.
Line 2: Models verified. A list of one or more model identifiers included in a homogeneous verification. OFCL indicates the official forecast. BCS5 indicates a best-track CLIPER5 or SHIFOR5 forecast.
Line 3: Minimum and maximum cyclone wind speeds included in the verification. Depressions are excluded if the minimum wind speed is 34 kt (or higher).
Line 4: Indicates if subtropical cyclones are included in the verification.
Line 5: Indicates if extratropical stages are included.
Line 6: Indicates if special intensity verification of dissipated systems is included.

(Note: Additional descriptive lines may follow)

Section 2: Forecast error tabulation

Forecast errors, 1 line per forecast. Each line contains forecast errors for all of the models listed on Line 2 of the header section. Missing or unavailable data are indicated by -9999. Columns are identified by headers that are defined as follows:

Date/Time: Initial time of the forecast ($t=0$), given as [dd-mm-yyyy/hh:mm:ss].
STMID: ATCF cyclone identifier.
F12 – F168: Equivalent sample size for use in statistical tests of significance, for the 12, 24, 36, 48, 72, 96, 120, 144, and 168 h forecasts (although official forecasts and most models are only available out to 120 h). Because tropical cyclone forecasts are serially correlated, a forecast issued at 12Z is not independent of the forecast issued 6 h earlier. The required time between forecasts required for full independence is estimated to be 18 h. An entry of 1.0 for F indicates that no forecasts preceded the one in question by less than 18 h so that it counts as a full forecast for purposes of estimating sample size. Fractional entries will appear for forecasts more recently preceded by other forecasts.
Lat: Best track latitude of the cyclone at $t=0$ (degrees N).
Lon: Best track longitude of the cyclone at $t=0$ (degrees W).
WS: Best track maximum sustained wind of the cyclone at $t=0$ (kt).
000hT1: Track forecast error (n mi) for $t=0$ h for first model listed on Line 2.
012hT1: Track forecast error (n mi) for $t=12$ h for first model listed on Line 2.
024hT1: Track forecast error (n mi) for $t=24$ h for first model listed on Line 2.

036hT1:	Track forecast error (n mi) for t=36 h for first model listed on Line 2.
048hT1:	Track forecast error (n mi) for t=48 h for first model listed on Line 2.
072hT1:	Track forecast error (n mi) for t=72 h for first model listed on Line 2.
096hT1:	Track forecast error (n mi) for t=96 h for first model listed on Line 2.
120hT1:	Track forecast error (n mi) for t=120 h for first model listed on Line 2.
144hT1:	Track forecast error (n mi) for t=144 h for first model listed on Line 2.
168hT1:	Track forecast error (n mi) for t=168 h for first model listed on Line 2.
000hI1:	Intensity forecast error (kt) for t=0 h for first model listed on Line 2.
012hI1:	Intensity forecast error (kt) for t=12 h for first model listed on Line 2.
024hI1:	Intensity forecast error (kt) for t=24 h for first model listed on Line 2.
036hI1:	Intensity forecast error (kt) for t=36 h for first model listed on Line 2.
048hI1:	Intensity forecast error (kt) for t=48 h for first model listed on Line 2.
072hI1:	Intensity forecast error (kt) for t=72 h for first model listed on Line 2.
096hI1:	Intensity forecast error (kt) for t=96 h for first model listed on Line 2.
120hI1:	Intensity forecast error (kt) for t=120 h for first model listed on Line 2.
144hI1:	Intensity forecast error (kt) for t=144 h for first model listed on Line 2.
168hI1:	Intensity forecast error (kt) for t=168 h for first model listed on Line 2.

(These 20 columns are then repeated for each model listed on Line 2, with column headers 000hT2 – 168hT2, 000hI2 – 168hI2, etc.)

Note: Output forecast parameters, by default, are track error and intensity error. However, it is also possible to output along- and cross-track position errors, or x and y position errors. These would be indicated with column headers 000hA1, 012hA1, ..., 000hC1, etc., and 000hX1, 012hX1, ..., 000hY1, etc., respectively. The following conventions should be noted: along-track errors are positive if the forecast lies ahead of the verifying position (i.e., is too fast), and cross-track errors are positive if the forecast is to the right of the verifying position. X-errors are positive if the forecast lies to the east of the verifying position, and y-errors are positive if the forecast lies to the north of the verifying position.

Two different tables provide (1) track-and-intensity errors and (2) along-and-cross errors. Track errors in table (1) are absolute "great circle" distance. Along-and-cross errors give actual errors in x- and y- directions. Can be verified for any storm at a fixed time and position, if error calculated using x- and y- differences from table (2) is same as the great-circle difference from table (1)