

## PART II

# Geoinformation System of Global Tropical Cyclogenesis 'Geoinform-TC'

This section contains the geoinformation system (in the tabular form) of the global tropical cyclogenesis for 1983–2000 that was formed on the basis of the electronic version of the database 'Global-TC' (see item 3 of Part I). The given comprehensive chronological catalogues and evolutionary database presented in the geoinformation system are a radically different kind from website archives distributed world-wide with US mass-media and with www-servers in the performance of extended analytical preprocessing with the use of the unified phylosophy when forming catalogues and databases and in the presentation of the necessary information in the form adapted specially for the analytic research work (see items 2.3 and 3 of Part I).

The geoinformation system consists of two units: the chronological catalogue and the evolutionary database. The information is submitted as the tables and is distributed on given years of the observation, each of that, according to an adopted classification, includes the information about six active basins of the World Ocean:

- the Northwest Pacific;
- the Northeast Pacific;
- the Northern Atlantic;
- the Northern Indian ocean;
- the Southern Indian ocean;
- the Southwest Pacific.

Each year of observations contains: the chronological catalogue and the evolutionary database.

The table of the chronological catalogue for each year of observations consists of a list of the tropical disturbances originated in six active basins of World Ocean.

In the graphs of the tables the following notations are indicated:

- <sup>1</sup> is the serial number of a tropical disturbance in given year.
- 'Number' is the TC serial number according to the international classification (the four significant digits) The two-group classification number was used for the tropical disturbance (in given publication). Here the first two digits present the given year; the second two (or three)

digits present the tropical disturbances serial number in given year and in given basin.

- 'Name' is TC name according to the international list. No commonly accepted international names of tropical disturbances are available.

- 'Lat' is latitude in degrees (up to one tenth) of the geographical place of the disturbance's onset. The Southern latitude includes the minus sign.

- 'Long' is the longitude in degrees (up to one tenth) of the geographical place of disturbance onset. The Western longitude includes the minus sign.

- 'Dates' is month / date of the time of disturbance onset-dissipation (the first group digits present the time of disturbance's origin; the second ones present the time of its dissipation).

- 'Max. Stage' is the maximum stage achieved in process of the disturbance's evolution.

According to adopted modern classification of the tropical disturbances the evolution of each system are divided (for 1983–1999) into six stages:

- W is tropical (Easterly) wave (in Atlantic);
- L is a area of low pressure;
- TD is a tropical depression;
- TS is a tropical storm;
- STS is a strong tropical storm;
- T is a typhoon (hurricane).

Developing the chronological catalogue and the evolutionary dataset for 2000, the authors proposed and used the following definitions that represent in authors' view the more clear discrimination of stages for tropical disturbance evolution:

- TL is the initial tropical disturbance (a separated area with surface low pressure in the tropical latitudes);
- TW is a tropical (Easterly) wave;
- TD is a a tropical depression;
- TS is a tropical storm;
- STS is a strong tropical storm;
- T is a typhoon (hurricane);
- L is a extra-tropical disturbance (a separated area with low sub-surface pressure in the middle latitude).

The evolutionary database for each year of observations consists of a series of the tables for the each tropical disturbance occurred. All information is divided into six active basins.

The table of each disturbance has a subheading, in which the following notations are marked: brief name of basin; N of the disturbance; its name and the quantity of observation terms.

In the graphs of the tables the following nominations are indicated:

- N is the serial number of the given observation;
- 'Stage' is the stage of the disturbance's evolution;
- 'Date' is month / date of the observation time;
- 'Time' is Greenwich time of the observation;
- 'Lat' is the latitude in degrees (up to the tenth).

Southern latitude includes the minus sign;

- 'Long' is the longitude in degrees (up to the tenth).

Western longitude contains the minus sign.

- 'Press' is the pressure in mb;
- 'Wind' is the wind speed in the center of a disturbance in m/s;

• 'Shift' is direction of disturbance displacement in compass point;

- 'Vel' is the speed of TD displacement in knots.

Understanding all importance of the research to the processes of interactions between different latitude atmospheric zones, the authors amplified information blocks for each TC (only for 2000) by data description of the process of TC's dissipation. In the special case when TC system fails over the continent, in the end of numerical block the following remark is indicated:

— 'Dissipation over the land';

when TC system fails over the ocean:

— 'Dissipation over the water';

when TC system is absorbed by middle latitude meteorological system:

— 'Adsorption by middle latitude system'.

In the case when we were presented with a possibility to observe the TW overflow from North Atlantic to the basin of the Northeast Pacific or the interaction of an arised TL with tropical wave, the remarks are indicated:

— 'Leaves the basin Atlantic';

— 'Came from Atlantic basin';

— 'Associated with ATL...'. .