DATA FORMAT

Each individual datum is stored in one of two ways:

- For *gp* (grid point), *dd* (number of observations), and *msk* files, the value is stored as a seven digit numeral followed by a decimal point (FORTRAN f8.0). The value "-100." indicates landmass or the seafloor in the *gp, dd,* and *basin.msk* files; the value "1." indicate landmass in the *landsea.msk* file.

- For all other files (*an, se, sd, mn, ma, oa*) including, unless otherwise noted, value is stored as a seven digit real with 4 places to the right of the decimal (FORTRAN f8.4). The value "-99.9999" indicates landmass, the sea floor, or no data.

For both cases, there are 10 values per line, followed by a return.

The first value in a one-degree square file corresponds to the grid box centered at latitude 89.5°S and longitude 0.5°E (grid box 1,1). The first 360 values are incremented eastward in longitude, constant in latitude. The 361st value in the file is for the grid square centered at latitude 88.5°S and longitude 0.5°E (grid square 2,1). Figure 2 shows the one-degree coordinate system of the analyzed fields.

The program *analysis.for* and *analysis.c* are sample FORTRAN and C programs which can be used for reading in data, *analysis.exe* is a DOS executable version of *analysis.for*. These programs read in a single one-degree or five-degree data file, request a single latitude and longitude coordinate from the user, and return a 10x10 degree latitude-longitude grid of values centered on that coordinate: this is only written to the screen. The user should modify these programs according to specific needs.

The program *anlyxyz.for* is a sample FORTRAN program which reads in a single data file and writes out the entire 360x180 degree latitude-longitude grid values into an output file. The output file is in comma-separated-value (CSV) format, of the form “latitude, longitude, value”, and uses the original file name, with an extension of “.###”, where “###” is the standard depth level extracted (*e.g.* “.005” for standard level 5, or 50 meters – see Table 1). The program can extract a single depth level or all available levels (*e.g.* 1 to 33). “*anlyxyz.exe*” is the DOS executable of this program.

Table 1. Basins defined for objective analysis and the shallowest standard depth level for which each basin is defined.

#	BASIN	STANDARD DEPTH LEVEL	#	BASIN	STANDARD DEPTH LEVEL
1	Atlantic Ocean	1	30	North American Basin	29
2	Pacific Ocean	1	31	West European Basin	29
3	Indian Ocean	1	32	Southeast Indian Basin	29
4	Mediterranean Sea	1	33	Coral Sea	29
5	Baltic Sea	1	34	East Indian Basin	29
6	Black Sea	1	35	Central Indian Basin	29
7	Red Sea	1	36	Southwest Atlantic Basin	29
8	Persian Gulf	1	37	Southeast Atlantic Basin	29
9	Hudson Bay	1	38	Southeast Pacific Basin	29
10	Southern Ocean	1	39	Guatemala Basin	29
11	Arctic Ocean	1	40	East Caroline Basin	30
12	Sea of Japan	1	41	Marianas Basin	30
13	Kara Sea	8	42	Philippine Sea	30
14	Sulu Sea	10	43	Arabian Sea	30
15	Baffin Bay	14	44	Chile Basin	30
16	East Mediterranean	16	45	Somali Basin	30
17	West Mediterranean	19	46	Mascarene Basin	30
18	Sea of Okhotsk	19	47	Crosat Basin	30
19	Banda Sea	23	48	Guinea Basin	30
20	Caribbean Sea	23	49	Brazil Basin	31
21	Andaman Basin	25	50	Argentine Basin	31
22	North Caribbean	26	51	Tasman Sea	30
23	Gulf of Mexico	26	52	Atlantic Indian Basin	31
24	Beaufort Sea	28	53	Caspian Sea	1
25	South China Sea	28	54	Sulu Sea II	14
26	Barents Sea	28	55	Venezuela Basin	14
27	Celebes Sea	25	56	Bay of Bengal	1
28	Aleutian Basin	28	57	Java Sea	6
29	Fiji Basin	29	58	East Indian Atlantic Basin	32

Figure 2. One-degree horizontal coordinate system of the analyzed fields

Each element F(i,j) of an analyzed field F, where F is dimensioned F(360,180), is considered to represent the value at the center of a one-degree latitude longitude square

Longitude denoted by the variable "i", varies from 1 at 0.5 °E to 360 at 0.5 °W

Latitude denoted by the variable "j", varies from 1 at 89.5 °S to 180 at 89.5 °N

The point F(1,1) is the value at 0.5 °E, 89.5 °S

The point F(218,20) is the value at 142.5 °W, 70.5 °S

The point F(360,91) is the value at 0.5 °W, 0.5 °N