2.3. Data products on CD-ROM

The data products are to be distributed by CD-ROM due to this medium's large capacity. Appendix 1. shows the directory structure and the files included on the disk. The README.TXT file is a synopsis of this monitoring program, including this and previous reports. The ship's route map and schematic diagram of the monitoring system are contained in the FIGURE-directory. These files were saved in both PICT (*.PIC) and TIFF (*.TIF) formats for use in Macintosh, DOS and UNIX systems. The directory NUMDATA contains the subdirectory BTFL, which contains the bottle and filter data and the sub-directories L2Y91M06, ..., L2Y93M02, each of which contains the Level-2 data for each month. Macintosh computer users can transform DOS-text to Mac-text by changing [CR LF] to [CR] with the Apple File Exchange utility. The directory IMAGE contains the PICT and TIFF files of the sections of Level-2 data of the continuously sensed data, which corresponding to Figs. 5 to 8, and bottle and filter data, corresponding to Figs. 9 to 15, respectively.

3. Additional manned investigations

Manned investigations were performed seven times during the period from 1991 to 1993 (see Appendix 2). The main purpose of these investigations was to perform research-oriented experiments or additional measurements of sea water properties. Another purpose was to check for malfunctions during the cruise and explore ways to develop and improve the automatic sampling system. These additional measurements were performed on samples taken from an auxilliary sampling faucet branching from the sea water supply pipe feeding the automatic measurement system. We attempted to draw water for the additional measurements simultaneous with the automatic measurements.

Zooplankton and phytoplankton abundance and composition were analyzed by optical microscope and the nanoplankton and picoplankton by fluorescence microscope. Part of the plankton count data were transformed to values of carbon biomass in each size fraction with the data for size class and taxonomical classification to the genus level (Furusawa *et al.*, 1993) based on the method of Strathmann (1967).

The phytoplankton size spectra were measured with a Laser Particle Counter. This instrument detects the fluorescence signals of the chlorophyll-containing particle in a flow cell excited by the laser light via glass fiber and counts the number of fluorescence events in each size-fraction (Tsuda *et al.*, 1991, Tanaka *et al.*, 1993).

The distribution of the sea water CO_2 partial pressure was measured on five cruises (see Appendix 2) with a sea water CO_2 analyzer (Kimoto *et al.*, 1993), which made use of a newly developed bubble-based equilibrator for better time response and minimizing change of sea water temperature compared to the traditional shower-based types.

The results of these additional measurements are introduced briefly in the following sections as they will be published elsewhere.