

An interactive hydrographic data visualization and retrieval system for the Indian Ocean

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A window-based software system has been developed for hydrographic data selection, visualization and retrieval. The system was coded in Visual Basic 6.0 on the Windows 98 platform. The software is distributed together with the data profiles from CTD (Temperature, Salinity), Hydro-Cast (Temperature, Salinity, Oxygen, Nutrients, (NO₂, NO₃, PO₄, SiO₃), Ammonia, Alkalinity, and pH), XBT (Temperature.), and MBT (Temperature). The base module operates on a selected variable, and allows area selection by providing the ranges of latitude and longitude or by scrolling mouse on station distribution (locations) map of the variable. The variable within the area will display originator's cruise and station references in the same window; further selection criteria can be set by the user for the period selection by month, by season and by year. Selected variable profile can be viewed through the graphic module, which plots the profile depth (y-axis) versus variable (X-axis); a maximum of five variables can be viewed in a single window. The graphic module has an option to compute average cruise profile of the variable over the selected area and overlay a particular selected station profile of the variable in a single window for comparison and visualization. The system has been tested and interfaced with the ninety years (1906-1996) historical hydrographic data (25,291 profiles) available on the NIO-HYDRO-CD for the Indian Ocean.