



Handling Input and Output for COAMPS

Saturday, December 01 2007
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Two suites of software have been developed to handle the input and output of the Coupled Ocean Atmosphere Prediction System (COAMPS), which is a regional atmospheric model developed by the Navy for simulating and predicting weather. Typically, the initial and boundary conditions for COAMPS are provided by a flatfile representation of the Navy's global model. Additional algorithms are needed for running the COAMPS software using global models. One of the present suites satisfies this need for running COAMPS using the Global Forecast System (GFS) model of the National Oceanic and Atmospheric Administration. The first step in running COAMPS — downloading of GFS data from an Internet file-transfer-protocol (FTP) server computer of the National Centers for Environmental Prediction (NCEP) — is performed by one of the programs ([ssc-00273458](#)) in this suite. The GFS data, which are in gridded binary (GRIB) format, are then changed to a COAMPS-compatible format by another program in the suite (**SSC-00278**). Once a forecast is complete, still another program in the suite (**SSC-00274**) sends the output data to a different server computer.

The second suite of software (SSC- 00275) addresses the need to ingest up-to-date land-use-and-land-cover (LULC) data into COAMPS for use in specifying typical climatological values of such surface parameters as albedo, aerodynamic roughness, and ground wetness. This suite includes (1) a program to process LULC data derived from observations by the Moderate Resolution Imaging Spectroradiometer (MODIS) instruments aboard NASA's Terra and Aqua satellites, (2) programs to derive new climatological parameters for the 17-land-use-category MODIS data; and (3) a modified version of a FORTRAN subroutine to be used by COAMPS. The MODIS data files are processed to reformat them into a compressed American Standard Code for Information Interchange (ASCII) format used by COAMPS for efficient processing.

These programs were written by Patrick Fitzpatrick, Nam Tran, Yongzuo Li, and Valentine Anantharaj of Mississippi State University for Stennis Space Center. Inquiries concerning rights for its commercial use should be addressed to:

*GeoResources Institute
Mississippi State University*

*Building 1103, Room 233
Stennis Space Center, MS 39529
(228) 688-4218
www.gri.msstate.edu*

Refer to SSC-00273/4/5/8, volume and number of this NASA Tech Briefs issue, and the page number.