



# Meteorological Software

**M**illersville University, Millersville, Pennsylvania conducts a comprehensive meteorology program as a component of its Department of Earth Sciences. The department prides itself on its employment of state-of-the-art tools for its meteorological instructional classes and research projects. Among those tools is a NASA-developed computer program known as GEMPAK (General Meteorological Package).

In the classroom, a data line feed is ingested and stored in GEMPAK files with the data processed and displayed by means of text-based menu selection schemes. This allows classes — such as Synoptic Meteorology — to analyze and interpret multiple products and make students aware of the often difficult and varied analysis techniques that previously were only treated as theoretical concepts.

An example is shown in the computer screen display (*bottom*) of a meteorological parameter known as “isentropic potential vorticity;” GEMPAK makes possible such displays by embedding device drivers within the software. *Below right*, Millersville student Pat Market is using standard meteorological data from 12 different days in a search for sub-synoptic scale (less than 200 kilometers) factors that might lead to tornado formation in the mid-Atlantic region.

GEMPAK’s streamline and contouring routines allow for standardization of the methods as well as calculations of more complex derived products.

GEMPAK was supplied to Millersville University

by the Computer Software Management and Information Center (COSMIC)<sup>®</sup>, NASA’s mechanism for making available to industry, academic and government clients computer software originally developed by government agencies that has secondary utility (see page 140). •

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A NASA COMPUTER  
PROGRAM ADVANCES  
INSTRUCTIONAL  
TECHNIQUES IN  
METEOROLOGY  
TRAINING

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