the appropriate latitude, longitude, and pressure level based on the date and time. Radiances are simulated using the aforementioned meteorological information for initial guesses, and spectroscopic-parameter tables are generated. At each step of the retrieval, a nonlinear-least-squares-solving routine is run over multiple iterations, retrieving a subset of atmospheric constituents, and error analysis is performed. Scientific TES Level-2 data products are written in a format known as Hierarchical Data Format Earth Observing System 5 (HDF-EOS 5) for public distribution.

This software was written by Sassaneh Poosti, Sirvard Akopyan, Regina Sakurai, Hyejung Yun, Pranjit Saha, Irina Strickland, Kevin Croft, Weldon Smith, Rodney Hoffman, John Koffend, Gerard Benenyan, Hari Nair, Edwin Sarkissian, James McDuffie, Ruth Monarrez, David Ho, Benny Chan, and Michael Lampel of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*

This software is available for commercial licensing. Please contact Karina Edmonds of the California Institute of Technology at (626) 395-2322. Refer to NPO-35212.

SmaggIce Version 1.8

John H. Glenn Research Center, Cleveland, Ohio

SmaggIce version 1.8 is a set of software tools for geometrical modeling of, and generation of grids that conform to, both clean and iced airfoils. A prior version (SmaggIce 1.2) was described in "Preparing and Analyzing Iced Airfoils" (LEW-17399), *NASA Tech Briefs*, Vol. 28, No. 8 (August 2004), page 32. Ice shapes, especially those that include rough surfaces, pose difficulty in generating high-quality grids that are essential for predicting airflows by use of computational fluid dynamics. SmaggIce version 1.8 contains software tools needed to overcome this difficulty. For a given airfoil, it allows the user to define the flow domain, decompose the domain into blocks, generate grids, merge gridded blocks, and control the density and smoothness of each grid. Among the unique features of version 1.8 is a thin C-shaped block, called a "viscous sublayer block," which is wrapped around an iced airfoil and its wake line and serves as a means to generate highly controlled grids near the rough ice surface. Users can modify block boundary shapes using control points of non-uniform rational B-spline (NURBS) curves. Concave ice regions can be smoothed during geometrical modeling or creation of the viscous sublayer block.

This work was done by Mary B. Vickerman, Marivell Baez, Herbert W. Schilling, Barbara J. Wilson, Donald C. Braun, Anthony W. Hackenberg, James A. Pennline, Rula M. Coroneos, and Yung K. Choo of **Glenn Research Center**. *Further information is contained in a TSP (see page 1).*

Inquiries concerning rights for the commercial use of this invention should be addressed to NASA Glenn Research Center, Innovative Partnerships Office, Attn: Steve Fedor, Mail Stop 4–8, 21000 Brookpark Road, Cleveland, Ohio 44135. Refer to LEW-17846-1.