

EDITOR'S NOTE



URBAN CANYONS. The phrase brings to mind images of city streets lined with skyscrapers and either raging winds funneling through narrow passageways or excessive heat that cannot escape. Architects and city planners pay close attention to these phenomena, and try to assess the role that building geometries and sitings play on the local climate. While the weather can be used to augment the internal HVAC system of a building, excessive wind can create hazards for passersby and be responsible for spreading the exhaust from automobiles and smokestacks to more distant areas. In this issue, we focus on weather and its impact on buildings and their surroundings in a series of articles. The series starts on page 5, where the combined effects of wind and solar radiation on a college building are analyzed. A simulation of the wind patterns near a Belgian landmark appears on page 7, and the role of wind in dispersing pollutants from cooling towers is reviewed on page 8. The measurement of wind and airborne particulates by the French national weather service is the focus of an article on page 10, and the impact of wind on measurements of rainfall appears on page 12.

With the 2006 Winter Olympics around the corner, we are pleased to report on two cases where sports equipment is being improved through the use of CFD (p. 16-17). The Sports Engineering Research Group (SERG) in the UK has used FLUENT to simulate the flow around a skeleton rider, and the Institute for Research and Development of Sporting Equipment (FES) in Germany has used it to study the four-man bobsled. Watch for these teams when the events take place in Turin, Italy in February. A number of other

interesting applications of CFD also appear in the newsletter, and include waste water treatment (p. 14), a novel catalytic converter (p. 20), and the curing of a rubber tire (p. 26).

We are pleased to introduce two new products in this issue: FLUENT for CATIA (p. 27) and studentFLUENT (p. 36). The benefits brought by an existing product, FloWizard, to a company's product design cycle are reported on page 28. The Support Corner takes another look at drag laws in FLUENT (p. 32), following an introductory article on the same topic in the summer issue of *Fluent News*.

In early November, the heavy capacity Ariane 5 ECA launcher delivered two communications satellites into orbit. The launch was celebrated by the European Space Agency and the dozens of companies who have contributed to this program. As a tribute to Ariane 5, our entire supplement is devoted to stories from European companies who have worked towards the success of this program. The stories show how FLUENT has been used to simulate cryogenic flows (p. s4, s8, and s10), heat transfer (p. s4, s8, s12), free surface phenomena (p. s4, s10), and instabilities (p. s10, s14).

As the seasons change, seek shelter from the weather and enjoy this issue of *Fluent News*. We look forward, as always, to hearing about your work. ■

Liz

LIZ MARSHALL

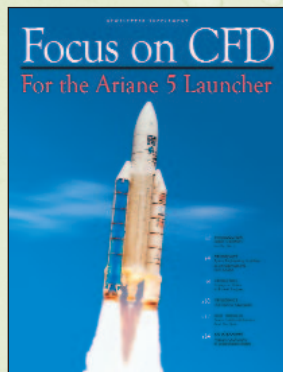
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ON THE COVER:

Pathlines and surface temperatures on a building at Michigan Technological University, computed using RadTherm and Fluent; temperatures from a thermal imaging camera are shown across the middle

Courtesy of ThermoAnalytics and Monte Consulting



ON THE SUPPLEMENT COVER:

Pressure oscillations in the combustion products inside a solid rocket motor
Courtesy of Avio Spa

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