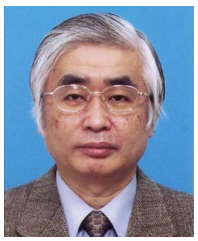
Preface

The Olympics and Visualization




Yamagishi, Y. Asai, K.

The 2008 Summer Olympic Games, held in Beijing, the People's Republic of China, saw a total of 10,500 athletes compete in 28 sports. What especially interested me was competitive swimming. High technology swimwear had become a topic of conversation. The swimwear fabrics were scientifically advanced materials, with swimwear that covered the arms and legs, reducing drag to less than that of the water's friction against the skin. Thus many swimmers set new Olympic and world records. Visualization techniques greatly contributed to improvements in athletes' form, sporting goods, and stadium design.

We are pleased to present the Journal of Visualization Volume 11, Number 4, to our readers. The impact factor of this Journal has increased every year, and is now 0.867. This shows that JOV is highly appraised by researchers worldwide.

This issue contains eleven regular papers, two short papers and a report. The authors are drawn from all over the world — France, China, the United Kingdom, Korea, the United States, Switzerland and Japan.

In this issue, visualization techniques of PIV are applied to the pressure distributions around an airfoil, the characteristic flow in a tee-branch pipe, and acoustic streaming. Direct numerical simulations are performed to visualize the effect of blowing through a slot, and the flow behaviors of single and multiple square jets. In two phase flow inside an effervescent atomizer, the bubble-forming process is visualized with a high-speed camera. 2D-PIV measurements and time-resolved visualizations are used for the reconstruction of the Kelvin-Helmholtz vortex. The stress distribution of a metal material is visualized by coating the surface of test objects with mechanoluminescence. An off-surface visualization method using micro water droplets is applied to a Delta-wing vortex. The generation of shock waves is visualized by the Schlieren photographic method. Noise-level distribution is measured by microphone arrays, and a flow field is visualized by smoke and PIV. A tomography system is visualized by an electrodynamic sensor. Visualization of scientific arts are described using some examples of applications in subject research areas such as sculpture, archeology, fine arts and information aesthetics; which were discussed in the Scientific Art Session at FLUCOME9.

Lastly, I would like to thank all the contributing authors, reviewers and others who were involved with the publication of this issue

Managing Editors
Yamagishi, Y. and Asai, K.