

## VISUAL AND SPATIAL SENSING TO FLOW ANALYSIS

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### ABSTRACT

This minisymposium focuses on research integrating sensing technologies and flow analysis. Recent advances in photogrammetry, image processing, LiDER, and other visual and spatial sensing methods are opening new possibilities for acquiring flow-related geometry, motion, and field information, and for integrating such data into computational models. We invite contributions on a broad range of topics linking sensing and flow simulation, including image- and video-based measurements, sensing-assisted geometry acquisition, data assimilation, inverse analysis, hybrid experiment–simulation frameworks, machine learning for sensing data interpretation, and integrated pipelines from observation to numerical analysis. Contributions addressing laboratory, field, industrial, environmental, biomedical, and multiphase flow applications are all welcome. The goal of this session is to promote exchange across communities including imaging, sensing, computer vision, and computational fluid dynamics, and to discuss how diverse sensing modalities can enhance the accuracy, automation, and practical impact of flow analysis.