

Study of urban flow structure using PIV

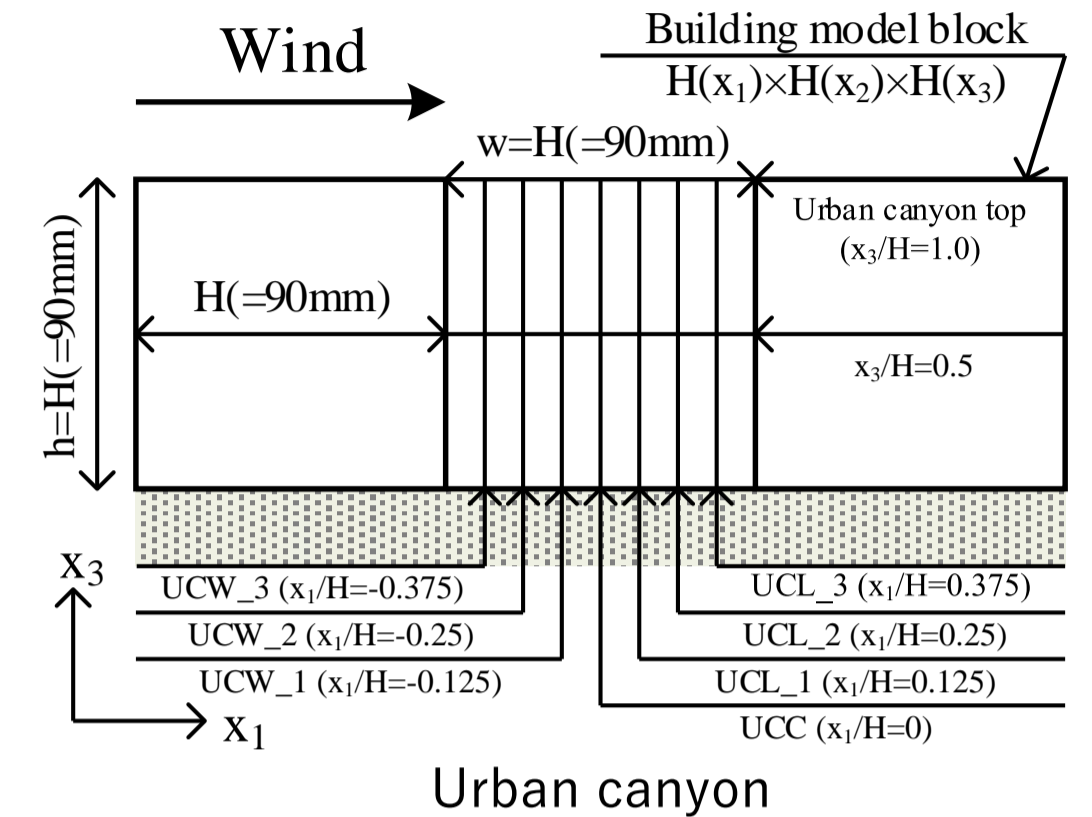
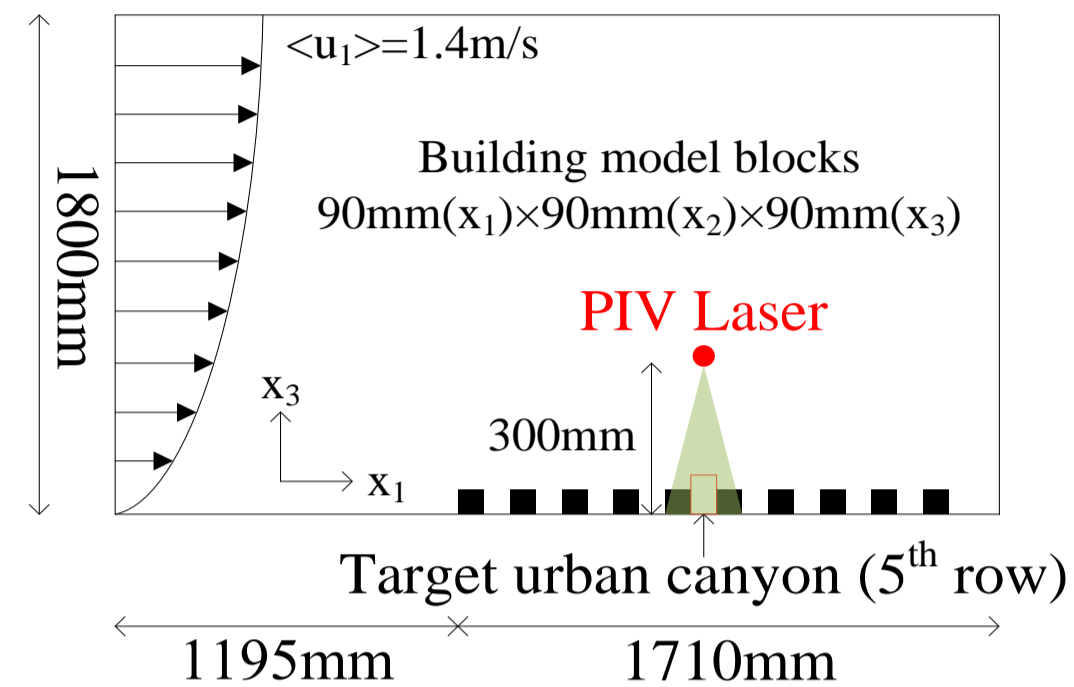
Background and objective

- Application of CFD analysis for environmental assessment
- The prediction accuracy of RANS models decrease at high density urban area

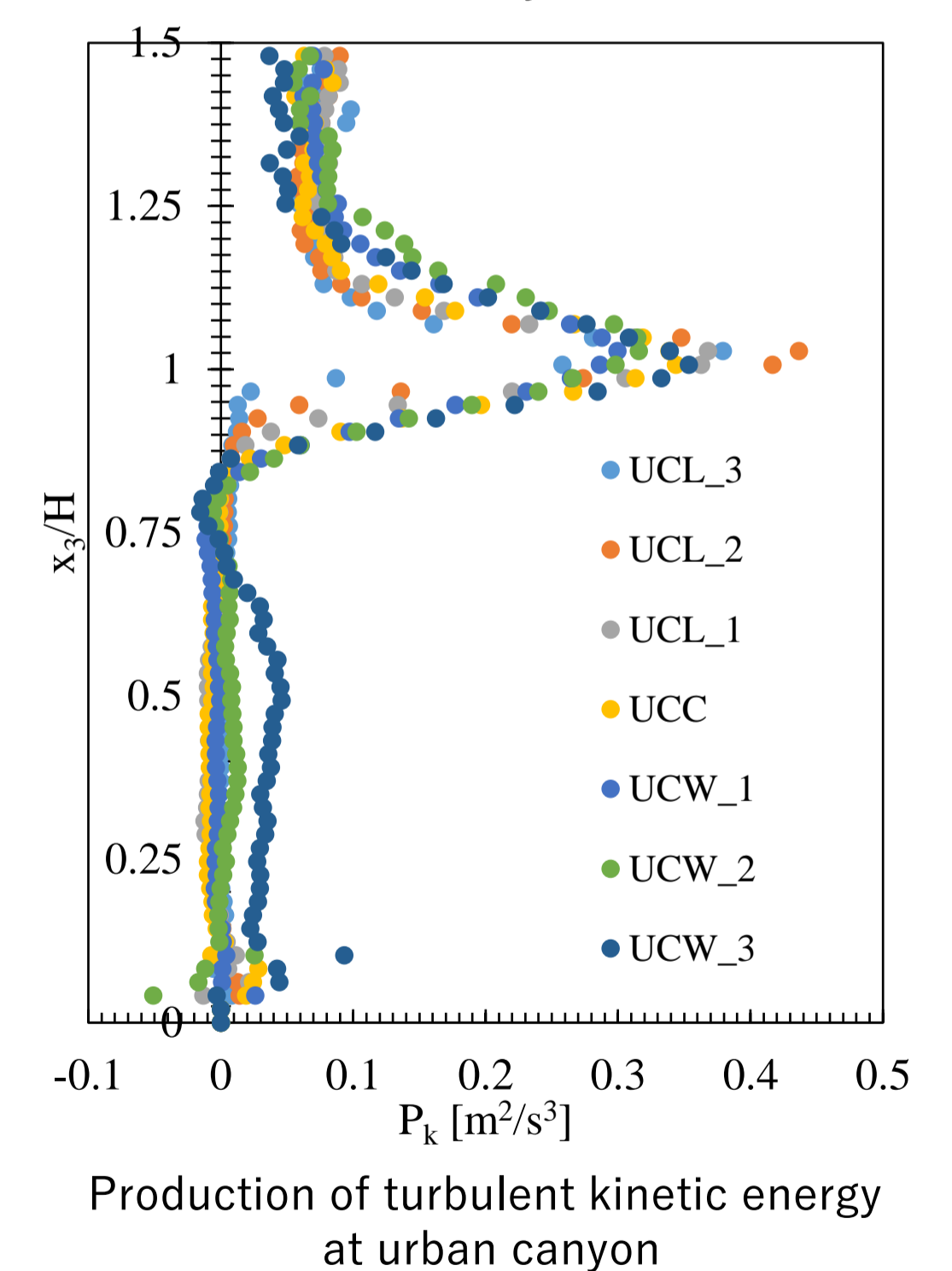
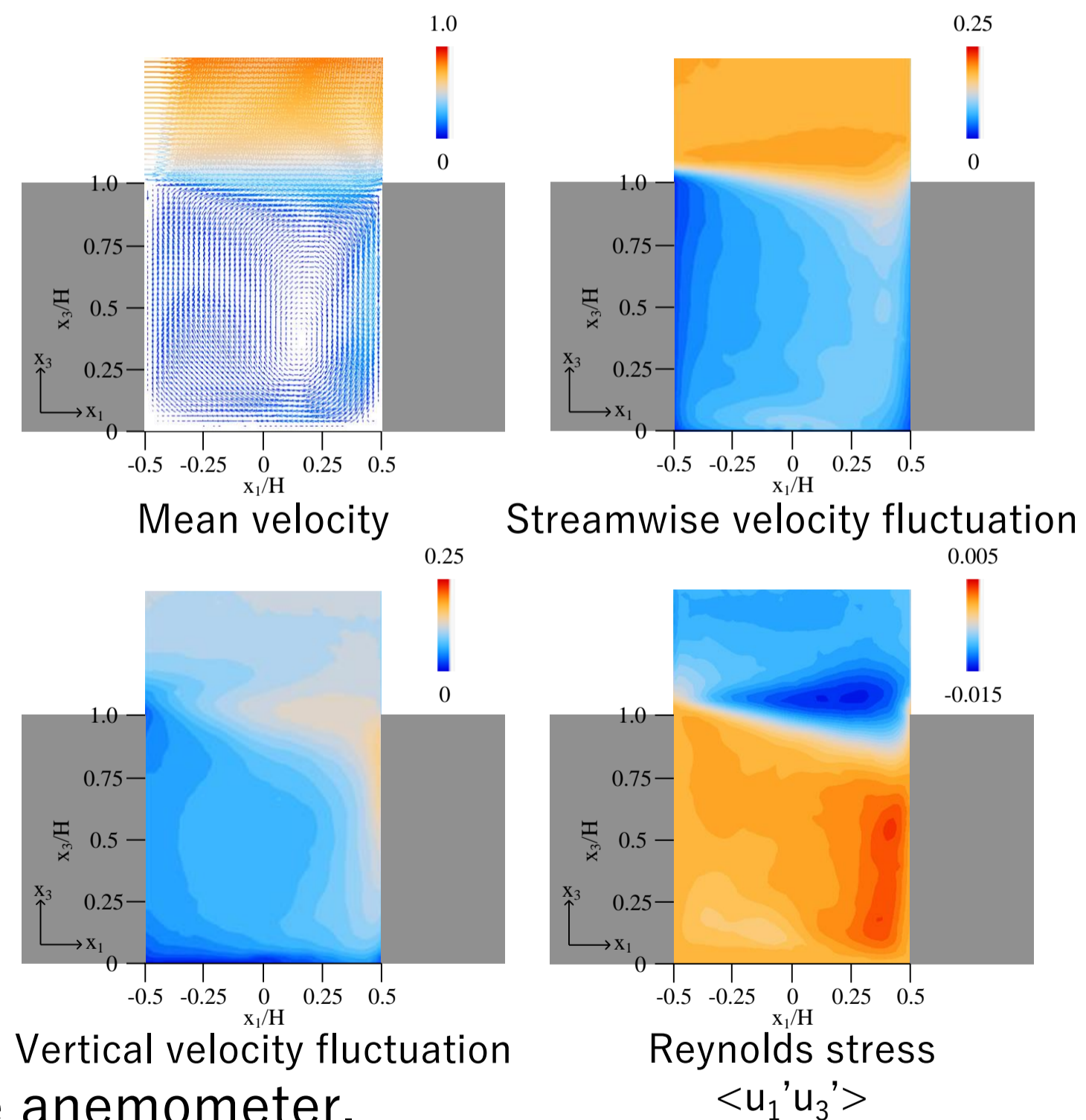
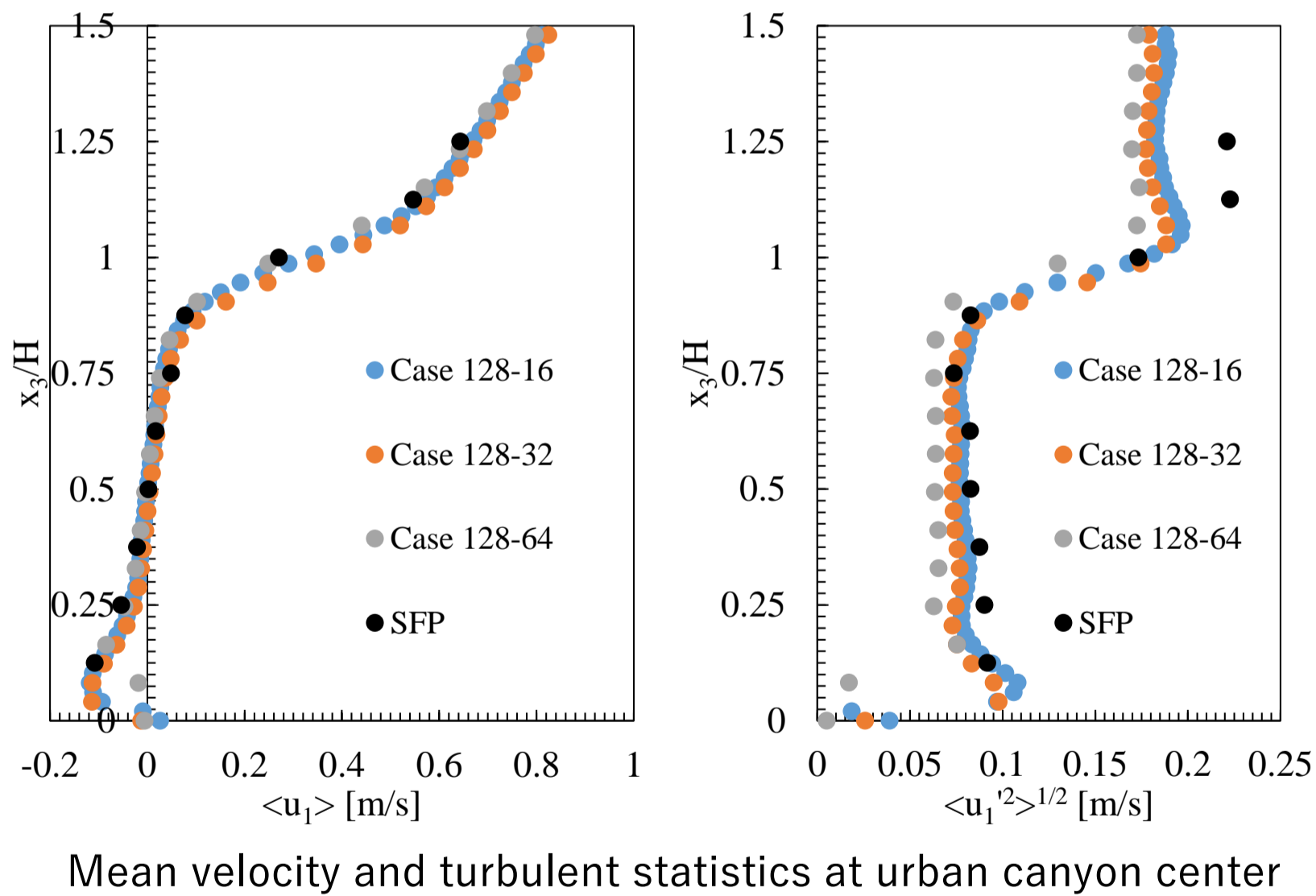
In this study,

1. Urban flow structure
2. Validity of Reynolds stress and turbulent heat flux modeling were investigated using PIV and LES to develop high accuracy turbulence model

Object of experiment



Result



The results of PIV agreed with those of hot-wire anemometer.

Within the urban canyon, the production of turbulent kinetic energy was negative and counter gradient diffusion occurred.