

Barriers and Challenges	Priority
<ul style="list-style-type: none"> • Data limitation: high cost / practical infeasibility of data collection, constrains ability to accurately capturing 'ground truth' with which to train/validate models 	High
<ul style="list-style-type: none"> • Data pedigree: dissimilarity of accuracy and precision on different sensing channels, missing and noisy data, delay in data delivery 	Medium
<ul style="list-style-type: none"> • Trade-offs in cost of sensors (and ongoing sensor calibration) versus data information content and data trustworthiness 	Medium
<ul style="list-style-type: none"> • Lack of metadata quantifying data pedigree, accuracy, etc. 	Low
<ul style="list-style-type: none"> • Data privacy and security (especially for critical infrastructure) 	High
<ul style="list-style-type: none"> • Computational/cost limitations to running deterministic physics model of the systems at the widely varying (physical and temporal) scales 	High
<ul style="list-style-type: none"> • Disciplinary distrust of black box models due to questions of interpretability with respect to underlying physics processes 	High
<ul style="list-style-type: none"> • Challenge for real-time solution development: data delays, gaps, noisiness 	Medium