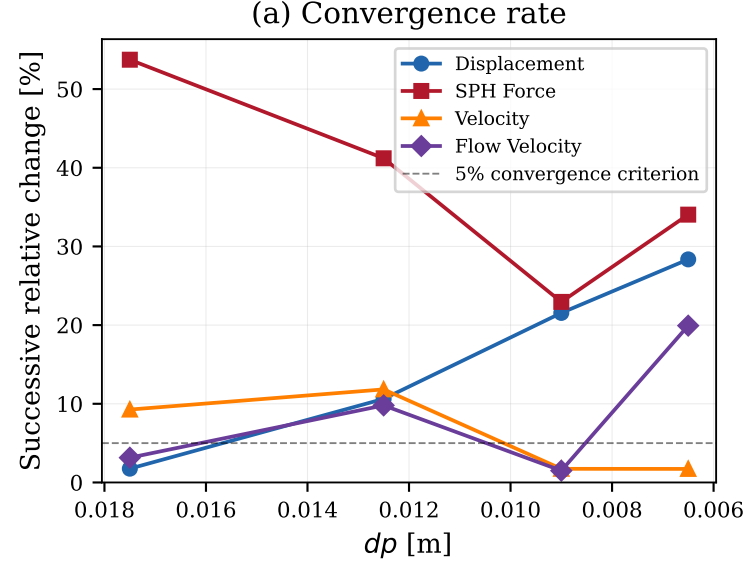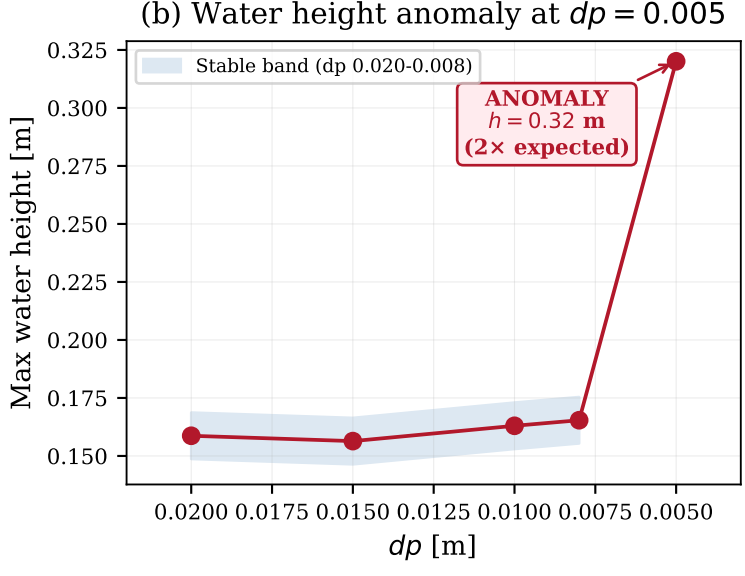Convergence Rate Analysis and Flow Field Anomaly