

Initial Decisions

Turbine

- Hub height
- D^{Rotor}
- Yaw misalignment
- C_{max}
- f_{max}

Layout

- X-, Y-, and Z-locations of each turbine

Inflow

- V_{hub}
- Wind direction



Inflow Generation

For High-Resolution

- DT_{high} from f_{max}
- DS_{inflow} from C_{max}

For Low-Resolution

- Width and $Y0_{\text{low}}$ from turbine Y-locations, yaw misalignment, yaw angle, and wake meandering
- Height from hub height, D^{Rotor} , and wake meandering
- n_y from Width and DY_{inflow}
- n_z from Height and DZ_{inflow}

Inflow

- V_{hub}
- Wind direction



FAST.Farm Setup

For High-Resolution

- DS_{high} from DS_{inflow}
- NS_{high} from DS_{high} and domain size
- $S0_{\text{high}}$ from turbine location, domain size, and DS_{inflow}

For Low-Resolution

- DT_{low} from D^{Rotor} , V_{hub} , C_{Meander} , and DT_{inflow}
- NS_{low} from low-res domain size and DS_{low}
- $X0_{\text{low}}$ and $Y0_{\text{low}}$ from turbine X- and Y-locations
- DS_{low} from D^{Rotor} and V_{hub} , and DS_{inflow}

Wake Dynamics

- dr from C_{max}
- NumRadii from D^{Rotor} and dr
- NumPlanes from DT_{low} , V_{hub} , and turbine Z-locations