

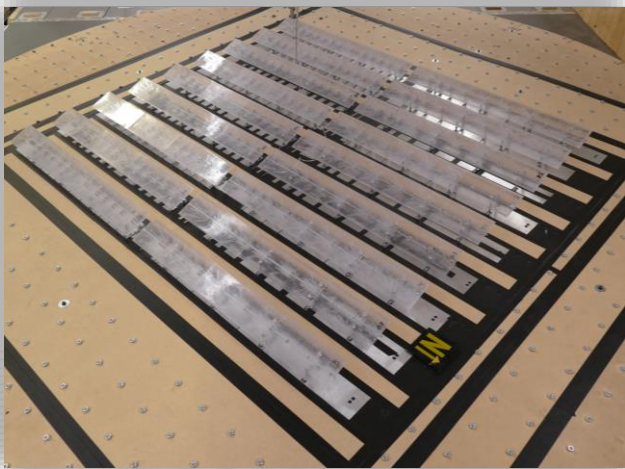
Davenport & Cermak testing the World Trade Center, 1964



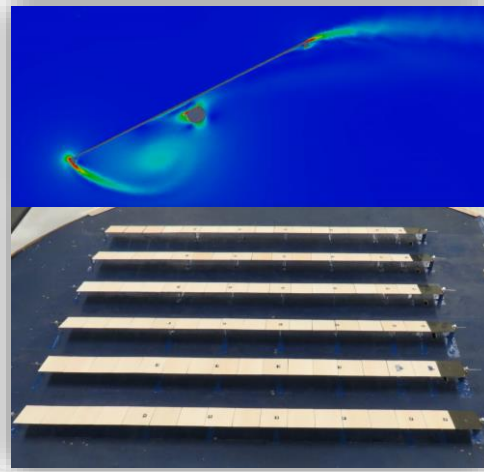
Peterson, Peterka, Cermak



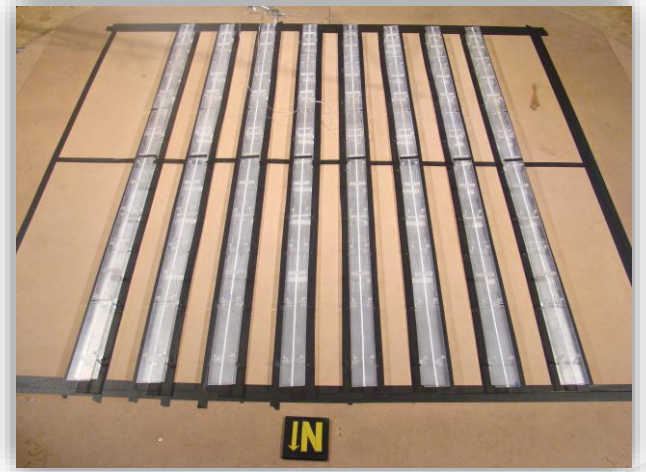
CPP Fixed Tilt Database, 2014



New CPP Tracker Post & Span Database, 2020



CFD Instability Screenings (2016) & Full 3D Aeroelastic Wind Tunnel Studies (2017)

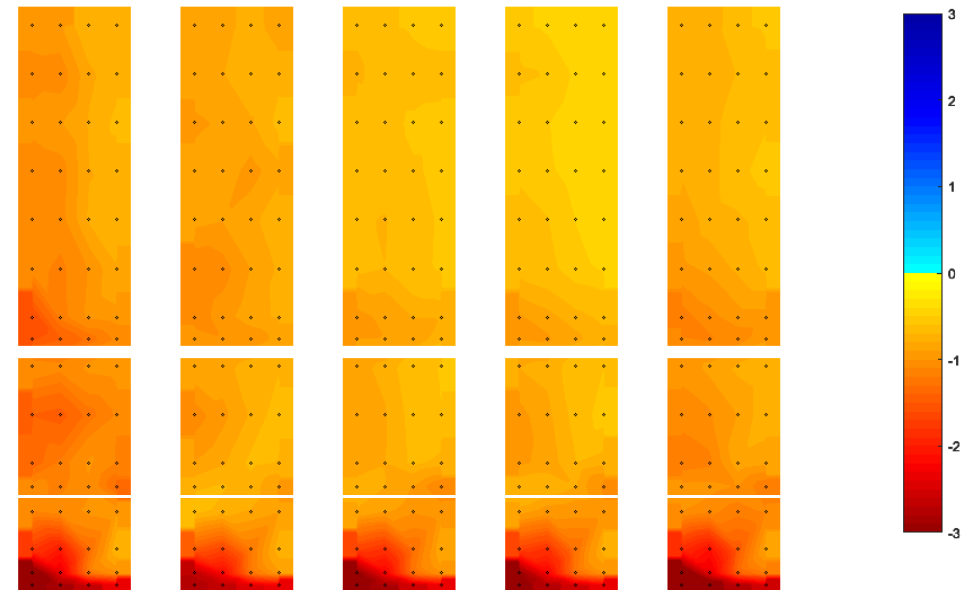
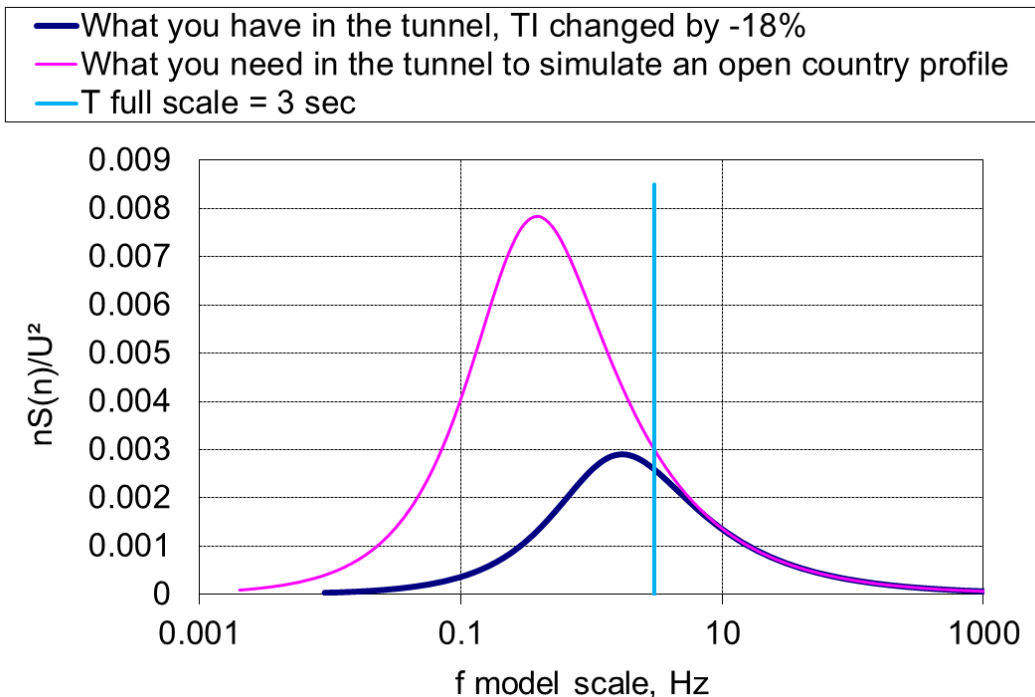


CPP Tracker Database, 2015

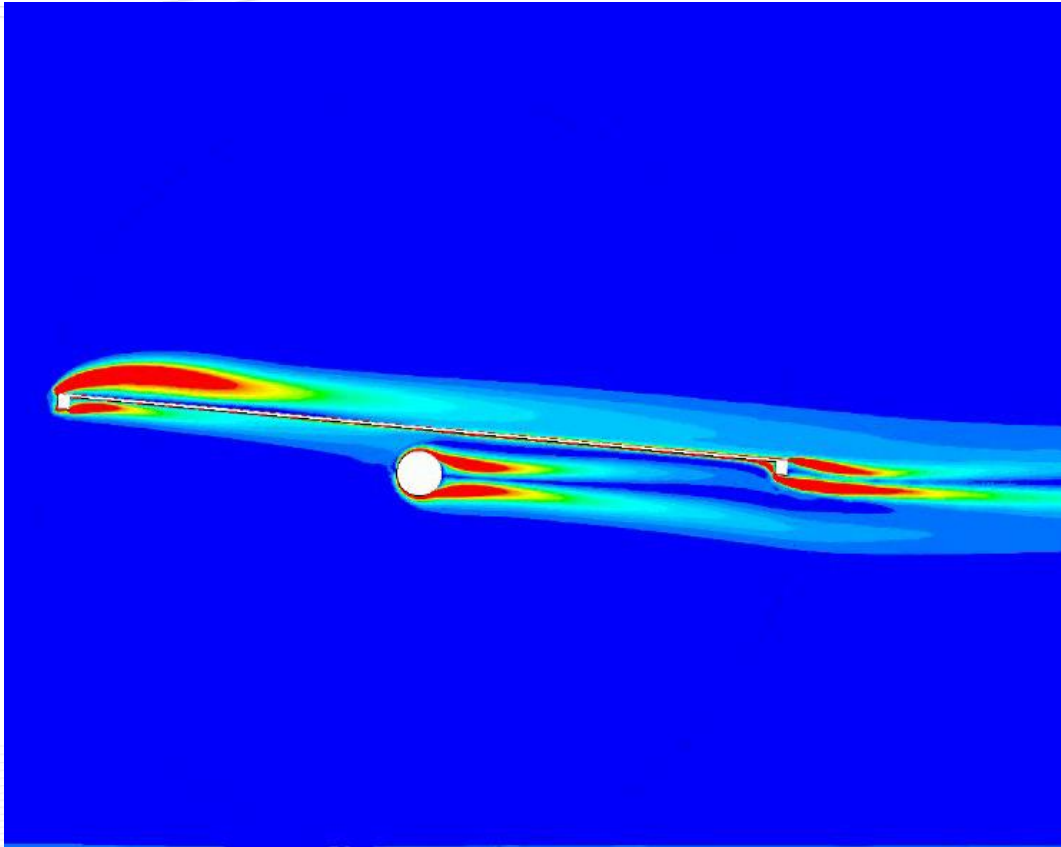
Wind Tunnel Testing for Solar

- Conventional ABL wind tunnel tests can't produce a full turbulence spectrum in the wind tunnel for large-scale models (e.g. 1:50)

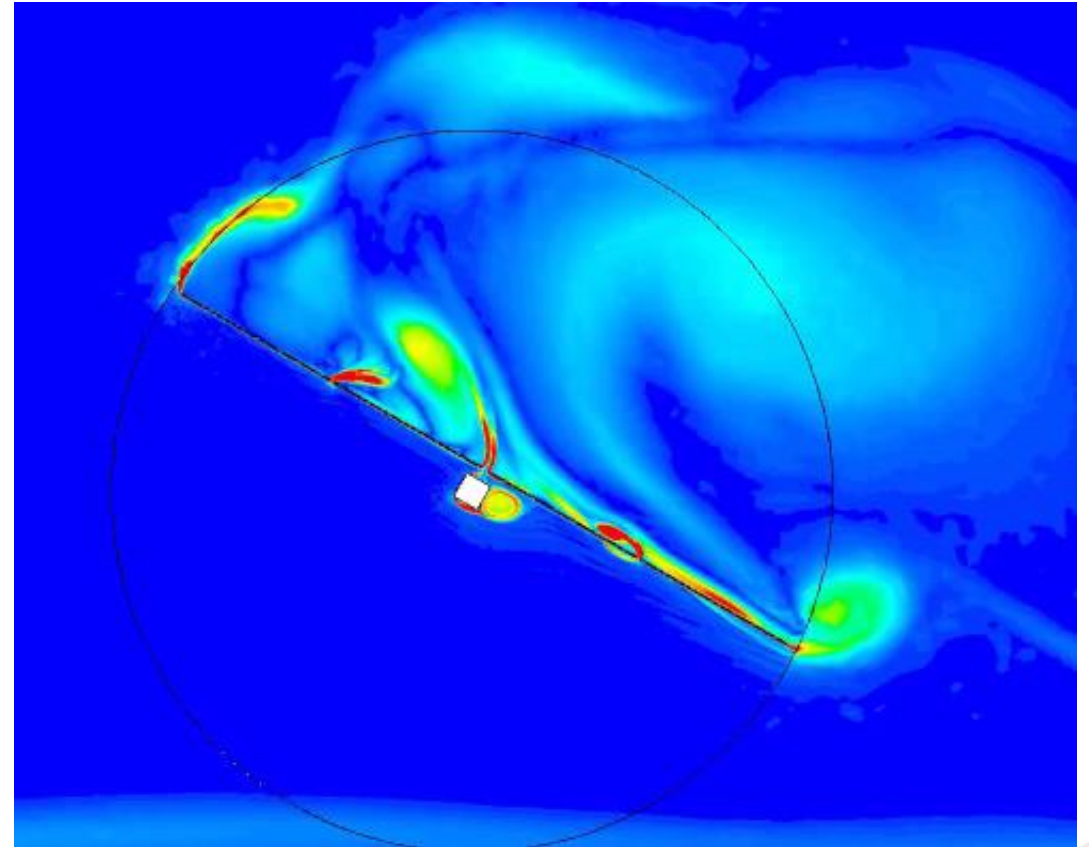
- Need appropriate pressure tap density to capture peaks at array edges and gaps



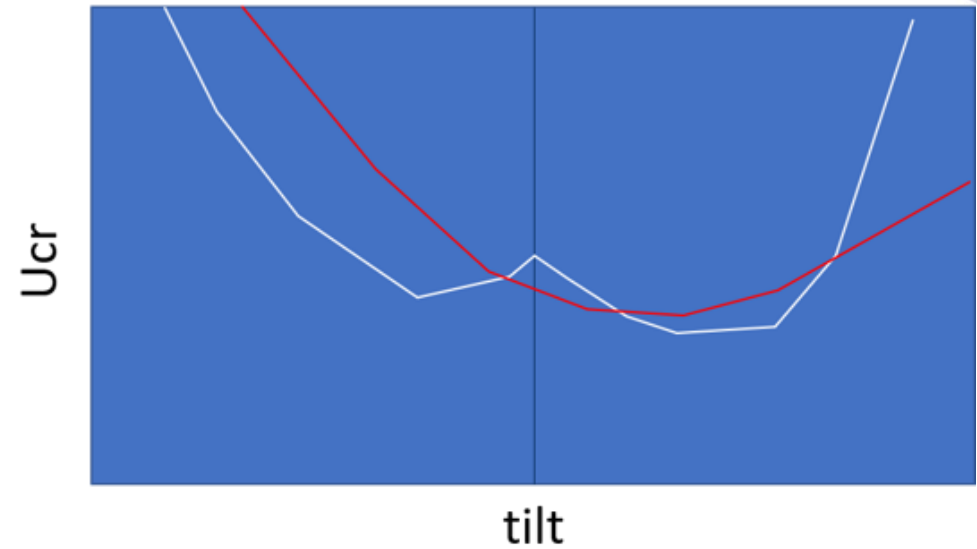
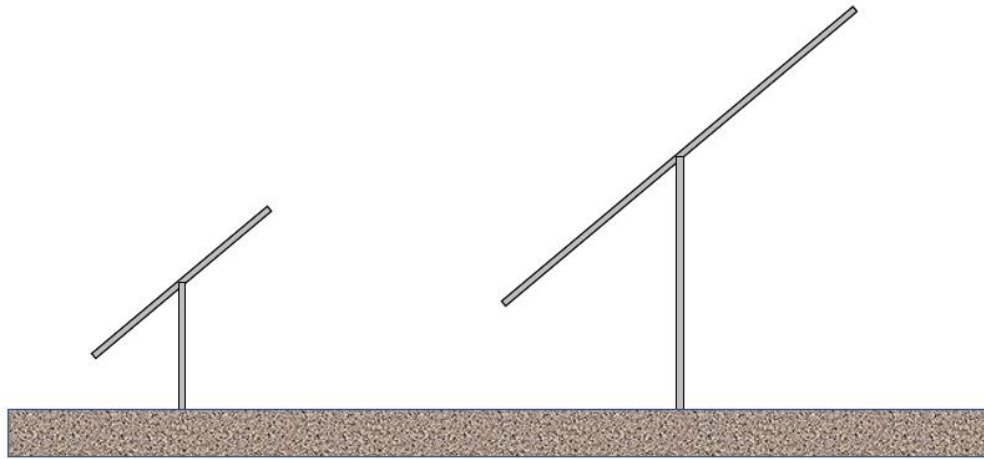
Tracker Instability



Low Tilt Instability – Torsional Divergence



Moderate/High Tilt Instability – VLI



1P vs 2P from a Wind Design Perspective

- Loads from one don't apply to the other
- 2P - Higher loads
 - More correlation
 - Larger areas
 - Higher off the ground
- Potential for instability at lower speeds on a 2P system
 - Higher torque tube stiffness required
- Different shape to the instability curves
- Should be accounted for in the design of the system