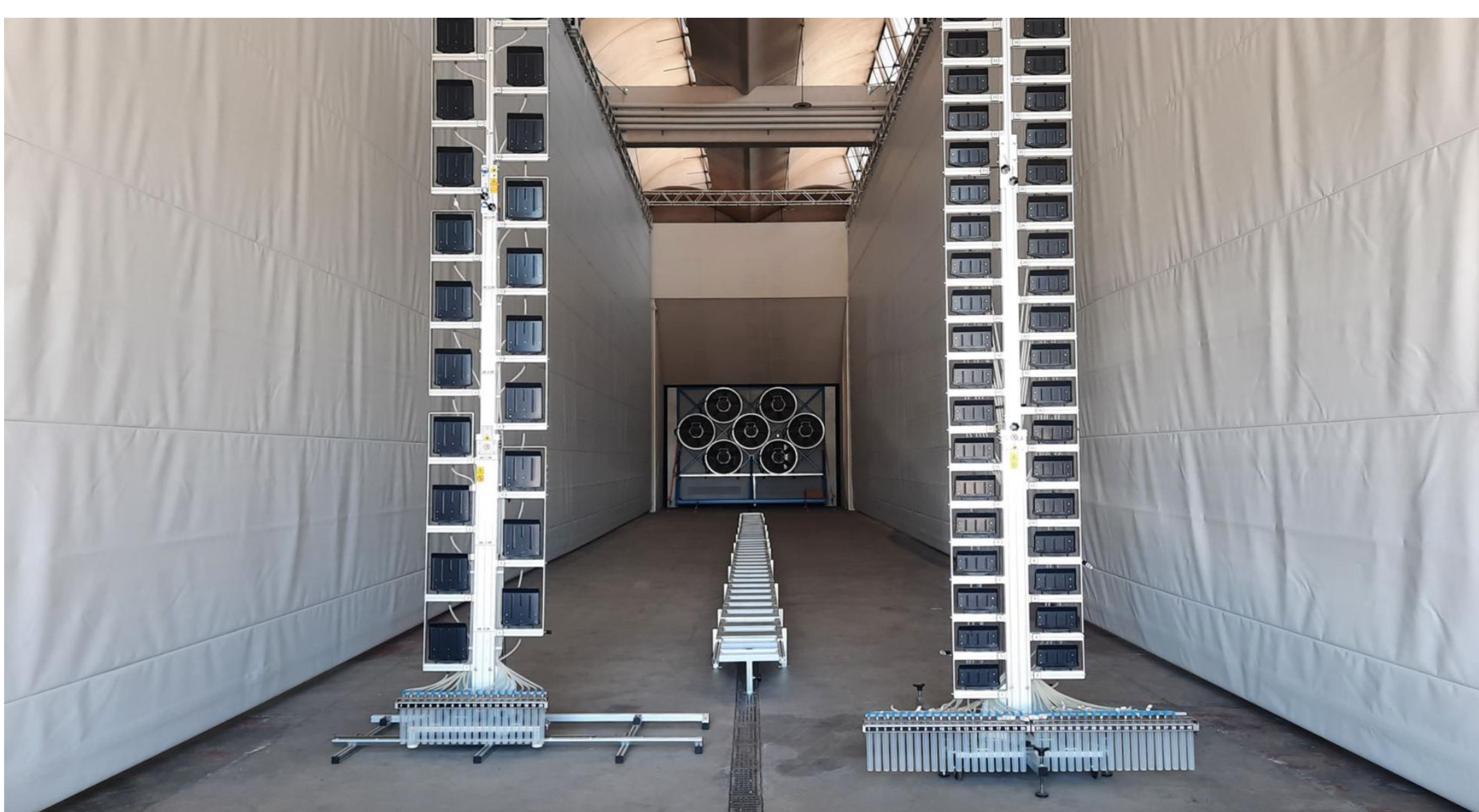
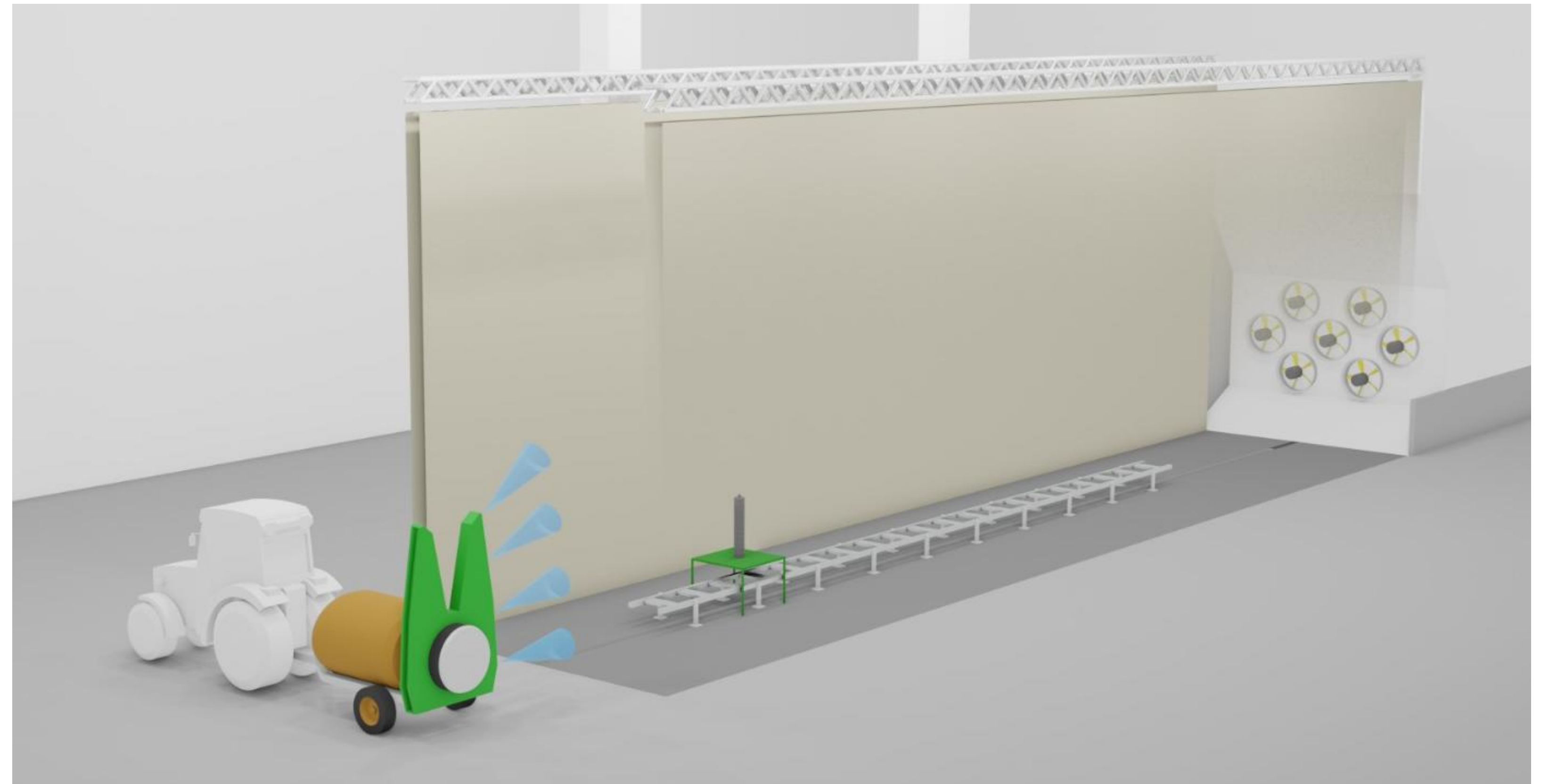


## WIND TUNNEL TO ASSESS AND MITIGATE DRIFT PHENOMENA CAUSED BY SPRAYERS

Becce L.  
Ayesha A.  
Gronauer A.  
Limongelli R.  
Mazzetto F.

### NEED FOR A WIND CHANNEL

- To test performance of real-scale sprayers, understand drift phenomena and efficacy of drift reduction techniques
- To investigate appropriate tracing solutions for spray deposition and drift
- Cut out environmental variables (mainly wind) to improve test repeatability



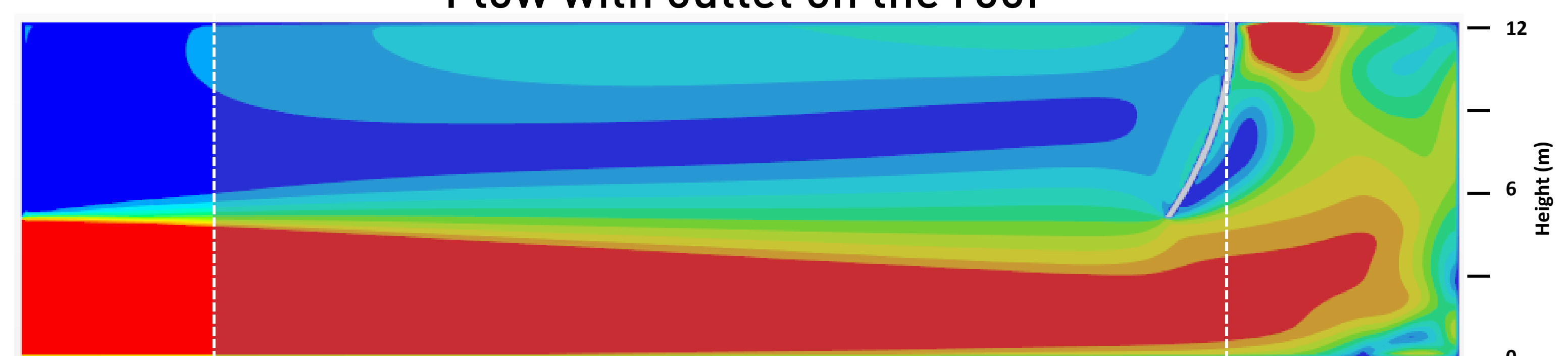
### WIND TUNNEL DESIGN

- Size: width 6 m, height 10 m, length 30 m.
- Requirement analysis: Steady airflow at maximum 5 m/s, stowable channel for space saving, quick deployment and reconfiguration.
- Simulations by CUBIT s.c.ar.l. (Cascina, Pisa, IT)

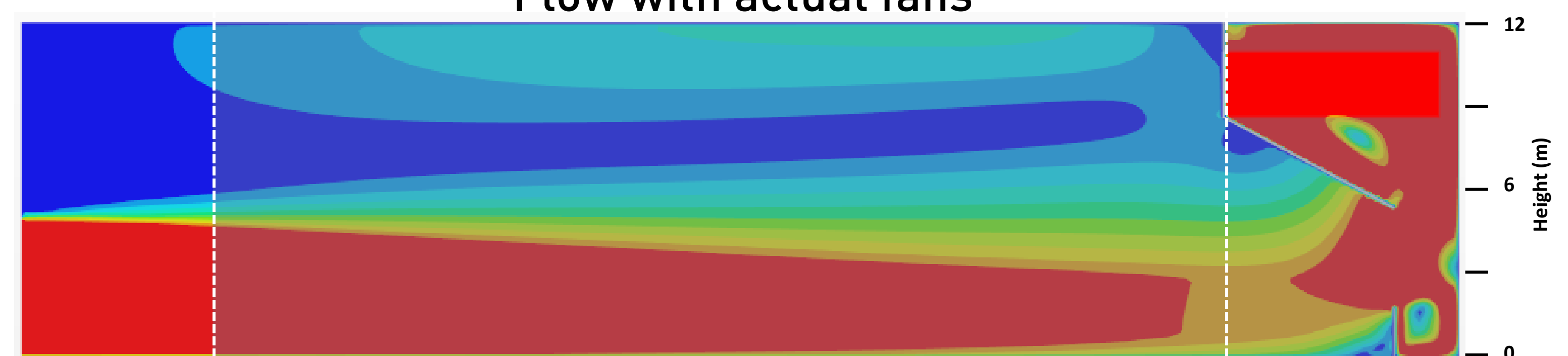
The ideal flow



Flow with outlet on the roof



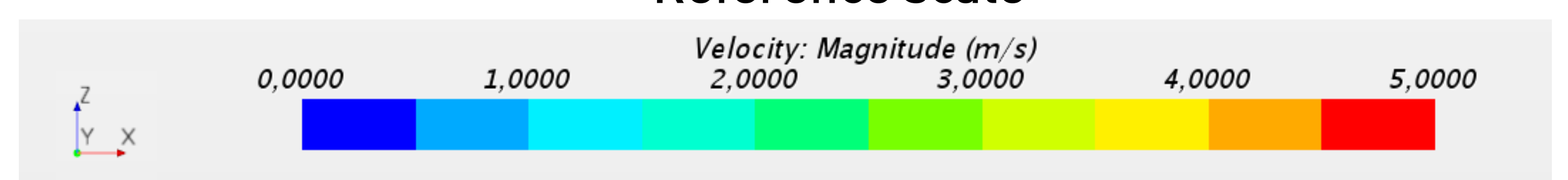
Flow with actual fans



IN

OUT

Reference scale



### OPPORTUNITIES

- Development of test methodologies for sprayer performance certification with respect to drift generation
- Aid in modeling large-scale aerosol atmospheric transport phenomena of plant protection products and emerging contaminants
- Spin-off application: wind-gust stability tests for UAVs