Tracker Webinar am 10.12.19

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Introduction

At first one has to look to the tracker system. One has to distinguish into

1. Single axis system with individual driving system at each axis
2. Single axis system with power driver for more than one axis
3. Tracker with torque driving system at each support column (i.e. Schletter sun step technology)

Tilt Angle

+60° to -60° ⟶ row distance

Wind Action

The wind loads have to be considered for the following actions:

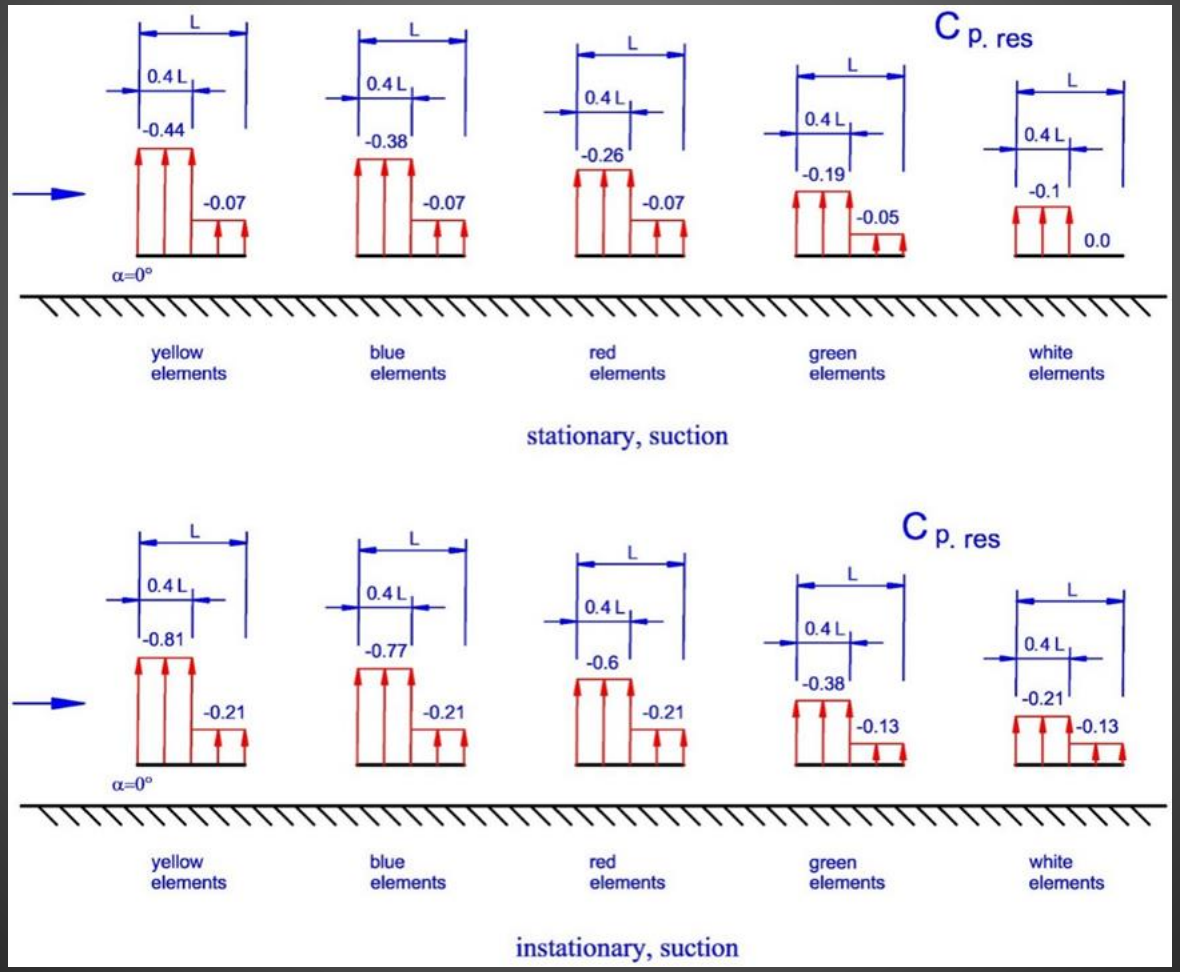
a. At working positions
b. At stow position

Wind Tunnel Test

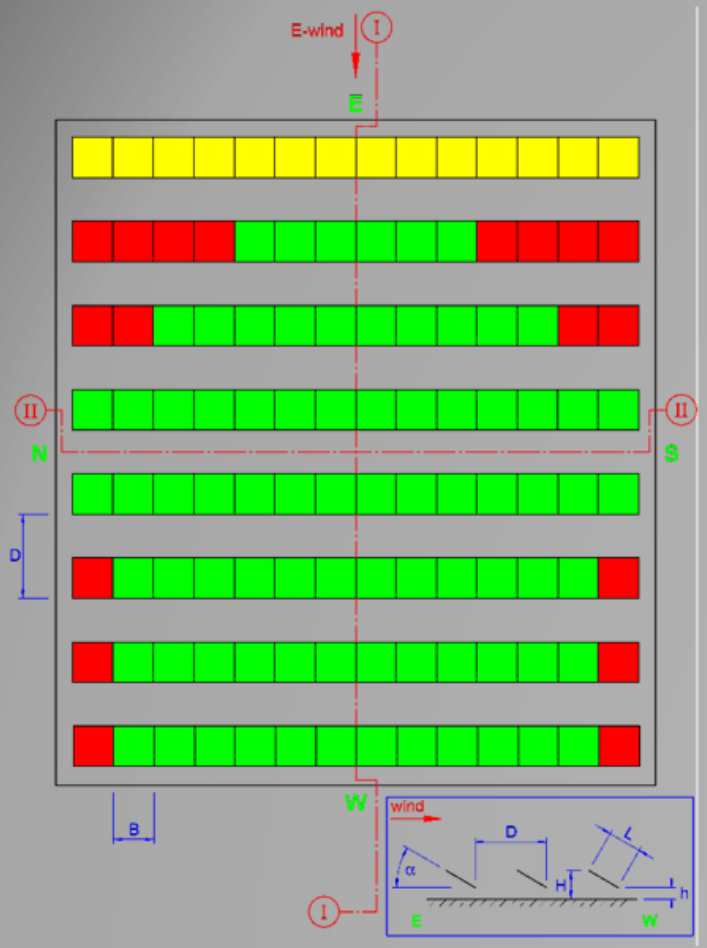
Wind Tunnel Test

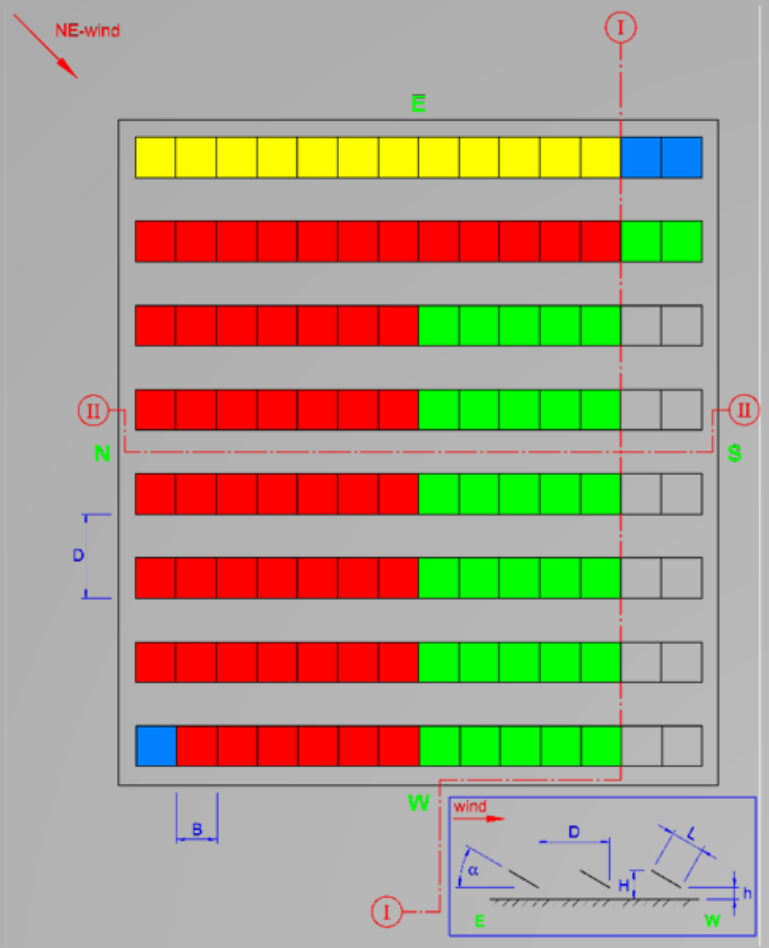
Orographic influence

Wind Tunnel Test

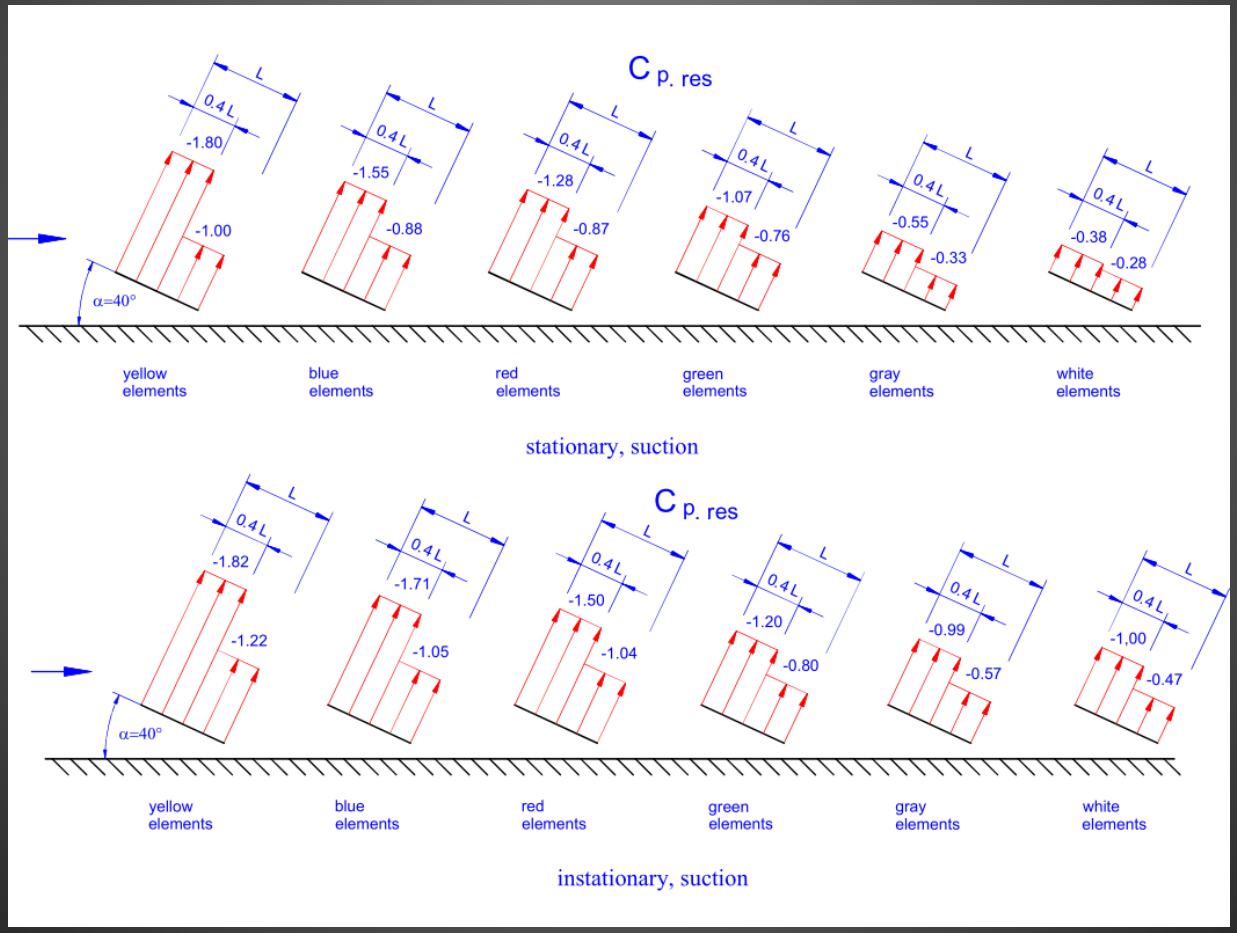


Wind Tunnel Test

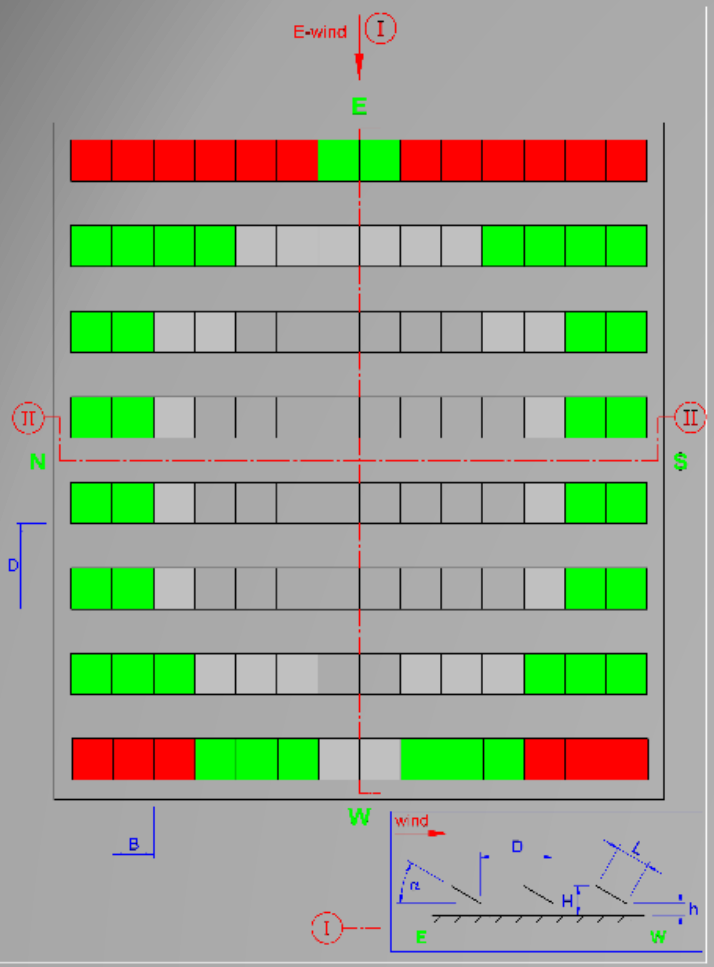


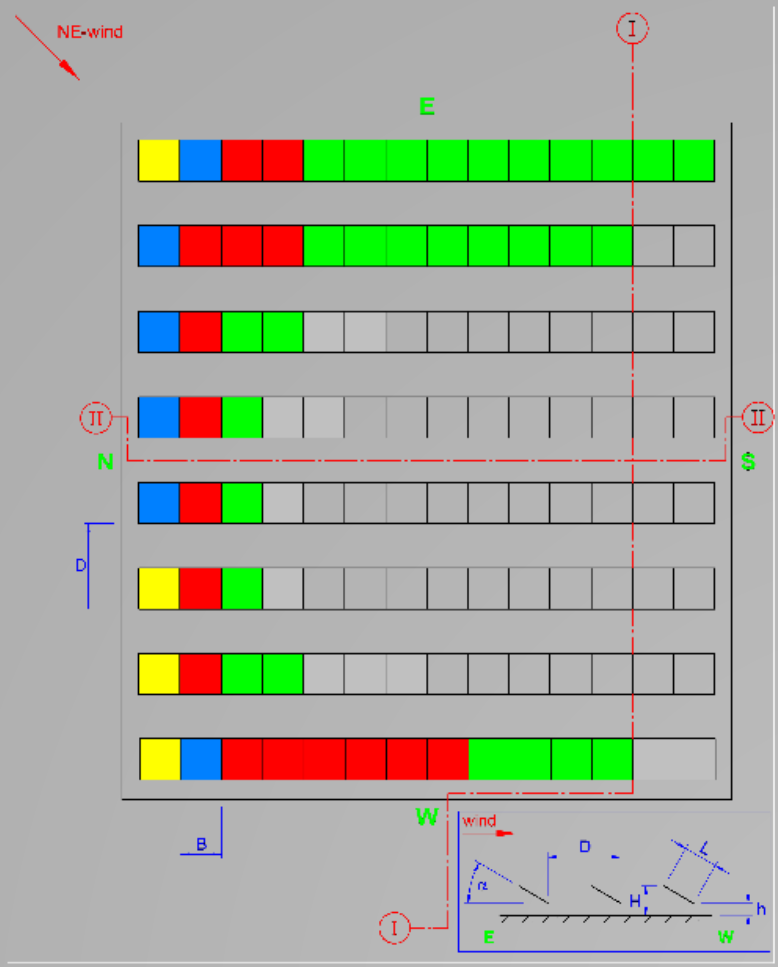


Wind Tunnel Test



Wind Tunnel Test





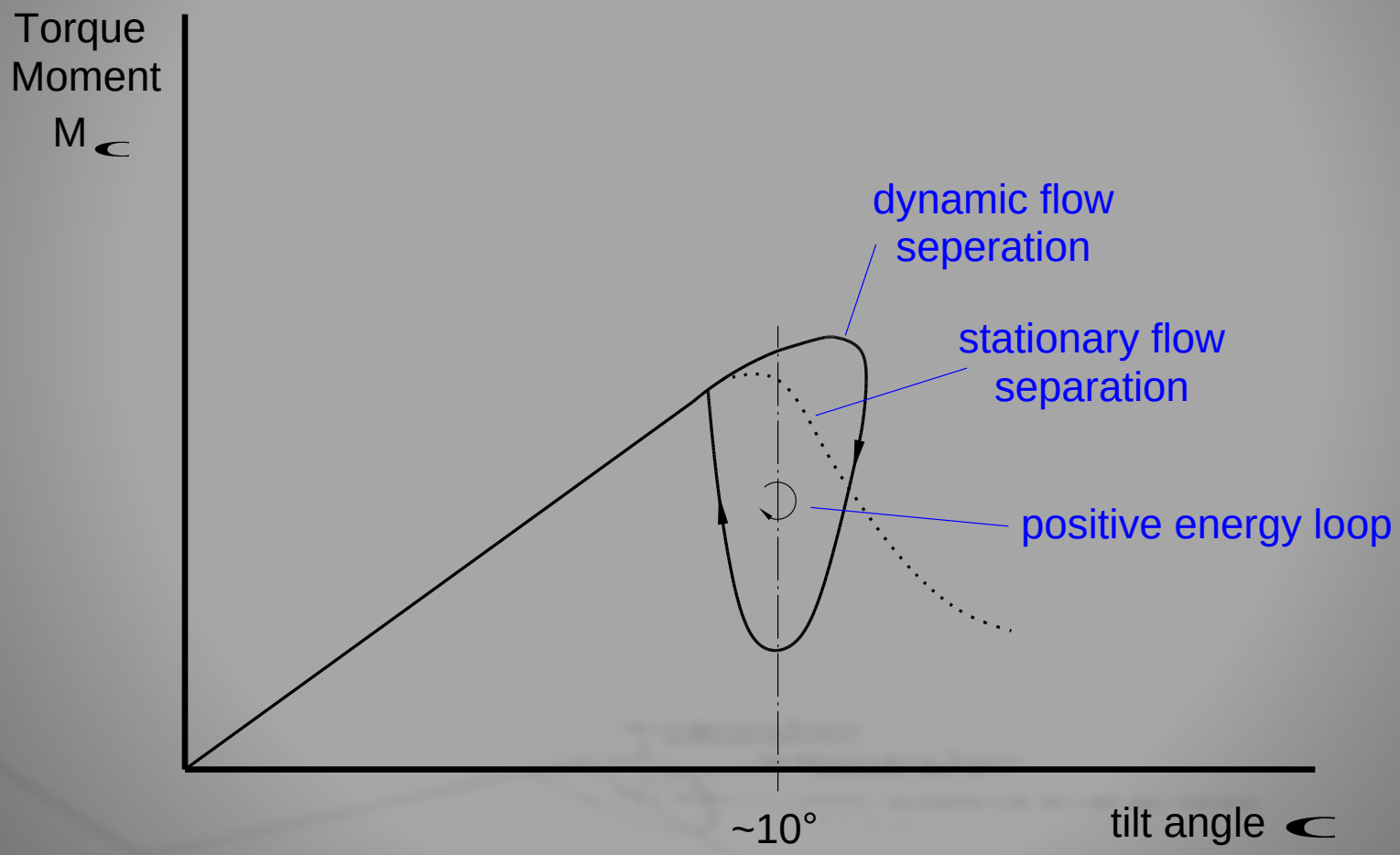
Flutter Instability

A special phenomenon may occur at the single axis tracker with long axis.

At stow position of $\alpha \approx 0°$ ⟶ Torque moment

Flutter Instability

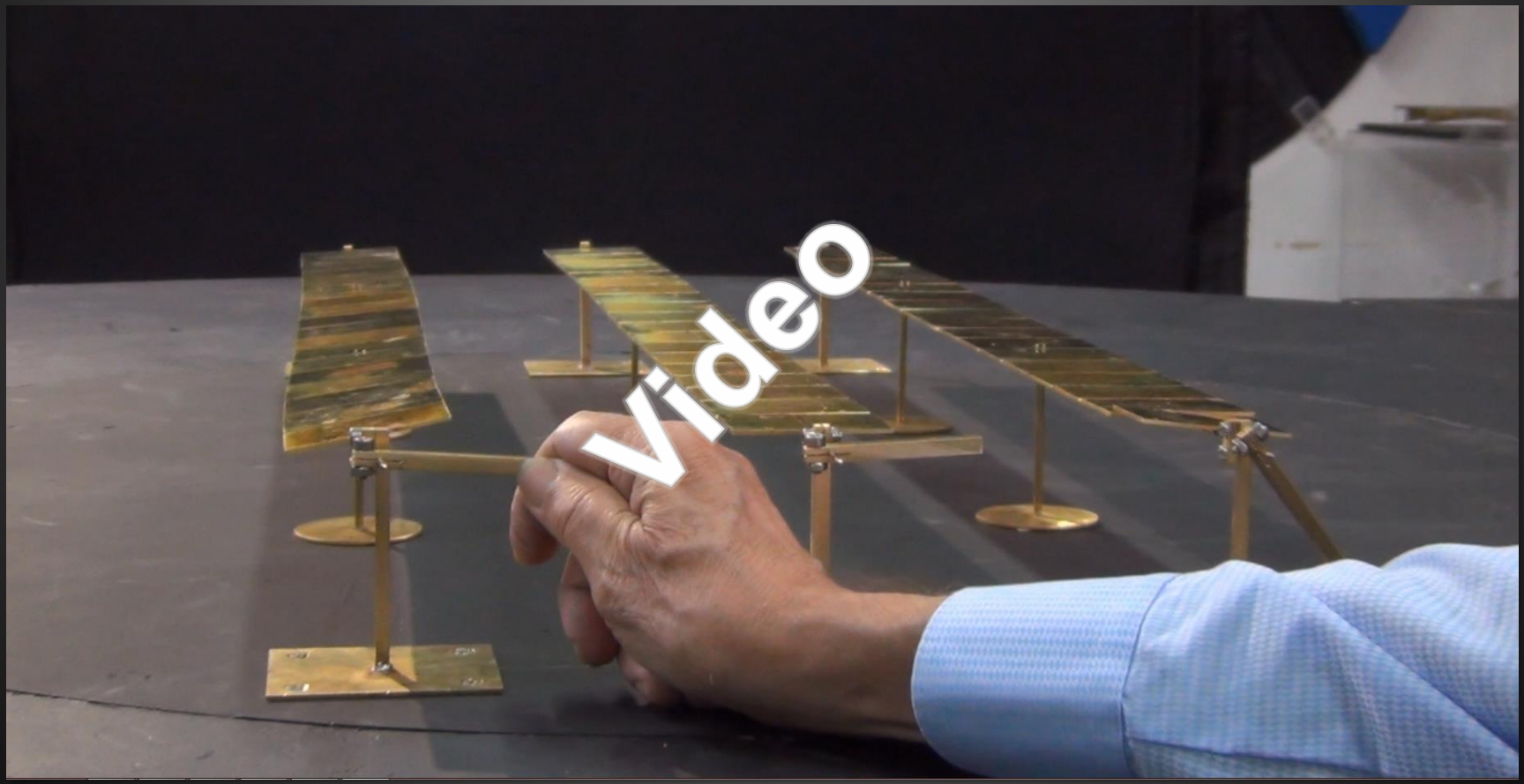
Flutter Instability



Flutter Instability

The stall flutter vibration has been demonstrated at a simple aeroelastic tracker model in the wind tunnel. By turning the modules into the critical position of approximately tilt angle α=10° the flutter vibration starts.

Flutter Instability



Flutter Instability

The stall flutter phenomenon cannot occur at trackers with torque driving system at each support column. Damping systems may also help to suppress the flutter vibration (I.e. dynamic vibration absorber)

Thank you for your attention

The End

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