

# ISEST

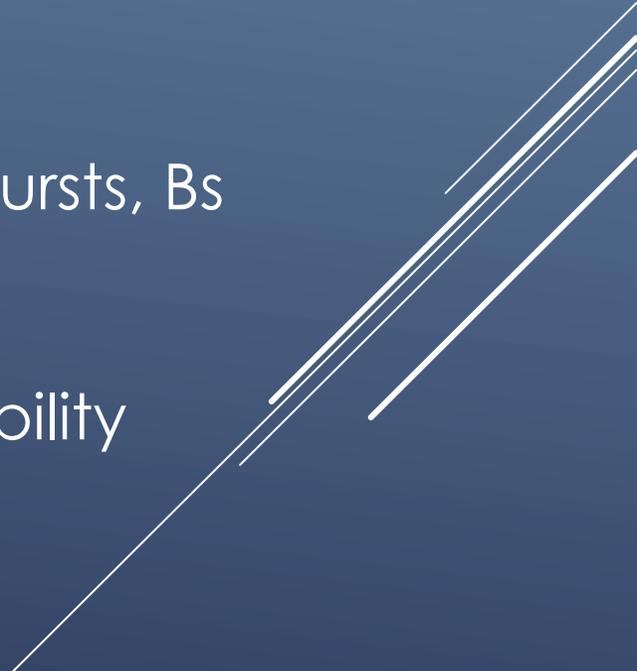
## Working Group 2: Theory

Brief summary by Yuming Wang

One talk contributed to WG2, but there were more talks relevant. It is difficult to distinguish theoretical work from data analysis and simulations

Jeju, Korea 2017.9.22

# WG2 RELATED TOPICS IN THIS WORKSHOP

- **Twist**: kink-instability of magnetic flux ropes,  $B_s$  prediction
  - **Forces**: dynamics, drag coefficient, arrival of time
  - **CME-CME interaction/collision**: momentum exchange and energy conversion
  - **Shocks and MFRs in 3D**: particle acceleration, radio bursts,  $B_s$  prediction
  - **Onset of CMEs**: properties in source region, torus instability
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# THE OVERALL AIM AND GOALS OF WG2

The overall aim of WG2 is to advance our comprehension of the physical background of Earth-affecting solar transients

The main goals are:

- to improve our understanding of the **structure and evolution of CMEs**, including magnetic flux ropes and driven shocks, as well as their origin;
- to improve comprehension of coronal/heliospheric **dynamics of CMEs**, including the **interaction** with ambient solar wind and interplanetary magnetic field, causing deceleration/acceleration and deflections;
- to get a better insight into how long does the **Lorentz force** dominate over the **aerodynamic drag force**, including the estimation of the drag parameter and/or the dimensionless drag coefficient;
- to improve our capability in modelling and forecasting the **southward magnetic field component ( $B_s$ )** inside a CME;
- to **compare the theoretical results with observations**, e.g., 1 AU transit time, impact speed, impact magnetic field, etc.;

**Thank you!**

