

### **Discussion/talks topics (+ collaborative work)**

- Small presentations, on what we should focus on from now, topics/questions opening possibilities of collaborative work during the meeting, new results since last meetings
- Go all together through the review skeleton draft (Wednesday afternoon)

### **Participants:**

- James Klimchuk
  - Craig Johnston
  - Gabriel Pelouze
  - Frédéric Auchère
  - Ramón Oliver
  - Matheus Kriginsky
  - Adel Boul'harrak Abed
  - Manuel Luna
  - Patrick Antolin
  - Clara Froment
- Via Zoom: Cooper Downs, Susanna Parenti, Nicki Viall, Jeff Reep

### **Tuesday:**

- Thermal instability vs. absence of equilibrium debate
- Diagnostics / Time-lag signatures of TNE (complete and incomplete condensations)

9:00 - 9:30: Greetings and short introduction on the meeting topics - what we have done so far on these questions

9:30 - 10:30: Discussions/small presentations

Coffee break

10:45 - 12:30: Discussions/small presentations

Lunch

14:00 - 15:30: Discussions/small presentations (Time-lag maps, Nicki will join on Zoom)

Coffee break

15:45 - 18:00 Discussions/small presentations

19:30: Dinner at Altes Tramdepot

### **Wednesday:**

- Statistics pulsations and rain
- Future plans & review

9:00 - 10:30: Discussions/small presentations

Coffee break

10:45 - 12:30: Discussions/small presentations

Lunch

14:00 - 15:30: Discussions/small presentations

Coffee break

15:45 - 18:00 Discussions future plans & review (Cooper will join on Zoom)

**Thursday:** Final discussion

9:00 - 10:30: Collaborative work

Coffee break

10:45 - 13:00: Collaborative work - adjourn

Lunch

## Thermal instability and Thermal non-equilibrium debate

Differences and relationships between TNE and thermal instability (Jim, Patrick, Ramón, Adel and Craig)

### ◆ **Thermal non-equilibrium**

- system (corona+chromosphere), physics, limit cycles, time and length scales, dependence on the heating mechanism and loop geometry

### ◆ **Thermal instability**

- thermal/entropy mode, conditions for instability, time and length scales
- Role of perturbations
- Presence/absence of thermal instability decide the character of the condensation: complete/incomplete?

Diagnostics (Clara, Nicki, Mattheus)

◆ **Time lag maps**

- the use of 171-131, can the zero time lag really say something about the cool plasma (i.e. under the peak temperature of 171)?
- 304: off-limb, on the disk : how can we use it for simulations/observations, positive time lag with “coronal” channels only in raining structures?

◆ **Applying diagnostics (DEM, time lags, periodicity search, detection of flows, etc) to simulation results**

◆ **Coronal magnetic fields inferred from coronal rain spectropolarimetry**

Statistics pulsations & rain

- ◆ **Rain detection in 304 and TNE volume estimation** (Patrick, Elie, Frédéric, Gabriel, Clara)
- ◆ **Pulsations:** Empirical mode decomposition (EMD) instead of FFT (better suited since we have here non-stationary processes?)