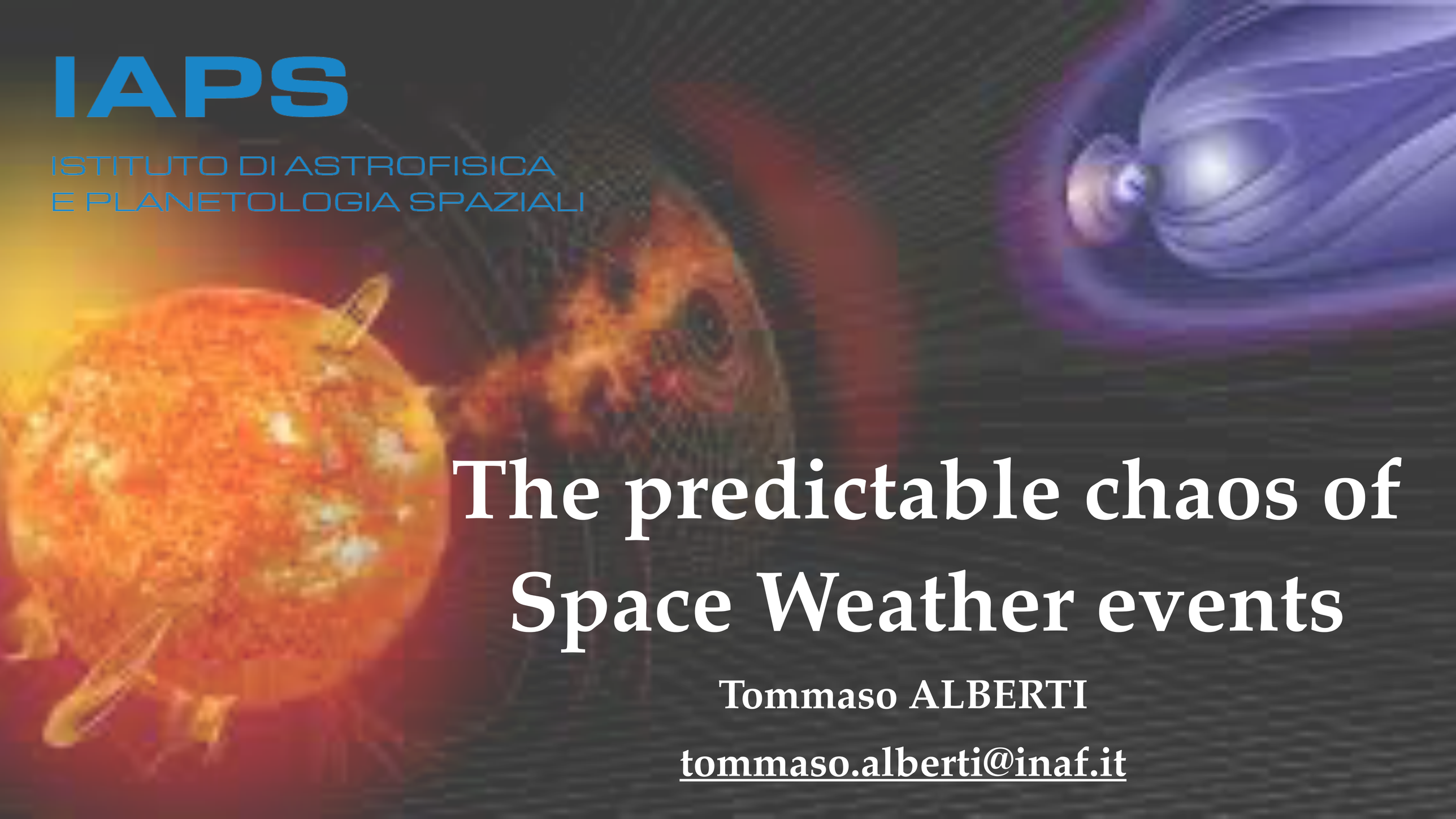

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E PLANETOLOGIA SPAZIALI

The predictable chaos of Space Weather events

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Main objectives

- Using Extreme Value Theory (EVT) and dynamical system theory for deciphering the dynamic features of Space Weather events

- Track the instantaneous properties via two quantities: the instantaneous dimension and extremal index

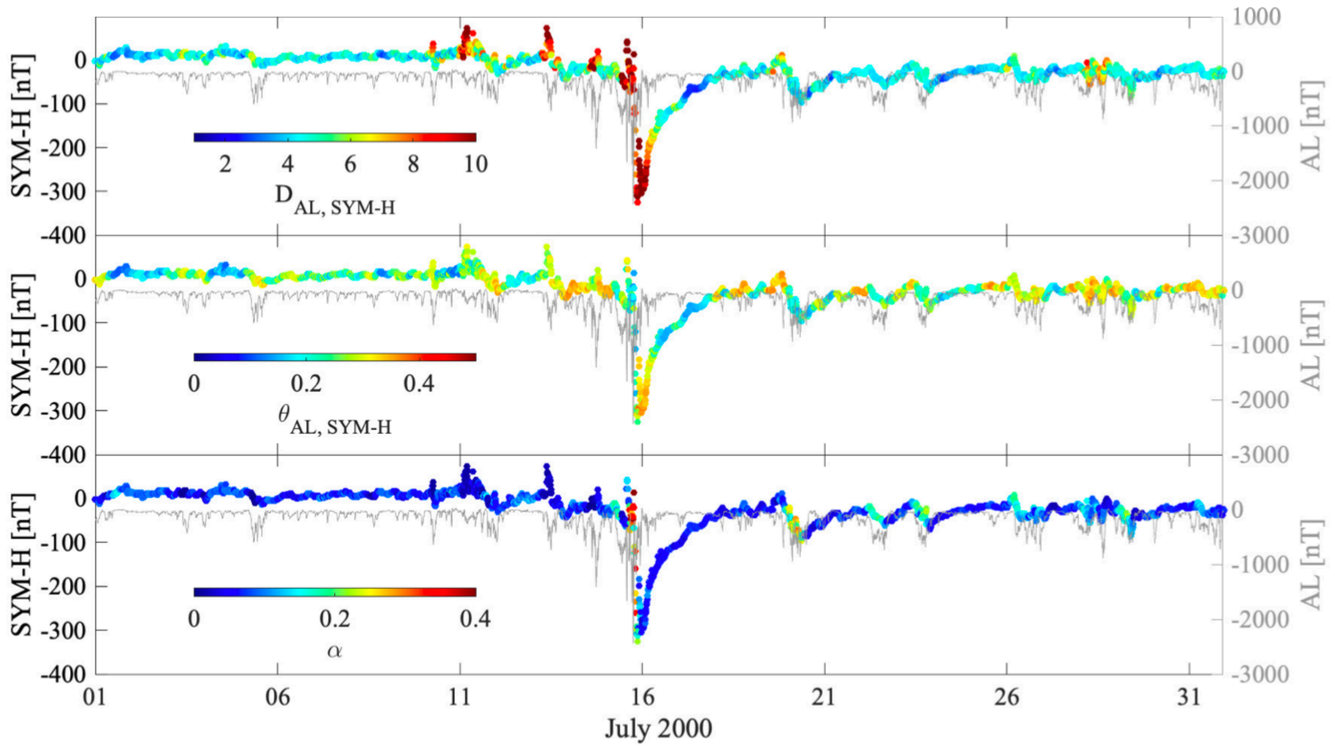
- These two indicators provide important measures for detecting the predictable chaos of Space Weather events. Indeed, they provide a measure of the predictability time but also tells us the degree of chaos, i.e., how similar Space Weather events produce similar effects in terms of intensity as well as on services and infrastructures

universe

Article

Concurrent Effects between Geomagnetic Storms and Magnetospheric Substorms

Tommaso Alberti [1,*], Davide Faranda [2,3,4], Giuseppe Consolini [1], Paola De Michelis [5], Reik V. Donner [6,7] and Vincenzo Carbone [8]



Deliverables & Next Steps

- **Deliverables**:

DONE IN PROGRESS

  - producing a significant literature in the field of Space Weather events as extreme events;
  - presenting our results at scientific conferences;
  - open-source Python and/or closed-source MATLAB resources;
  - a database of dynamical indicators for each Space Weather event considered in our analysis.

- **Criticisms**:
  - The PI has changed institution and he is now working on a different field
  - Demanding numerical resources -> supply with a new more performant PC

- **Next Steps**:
  - Additional events to be analyzed, possibly including the most recent ones in 2023
  - Publications & Presentations