

**International School of Space Science**  
**(<http://www.cifs-iss.org/>)**

**Web School on: Dynamical Systems and Machine Learning Approaches to Sun-Earth Relations**  
**1 – 5 February 2021**

The timetable is in CET

**Monday, 1**

10:30 Opening of the Web Site

11:15 Welcome

Chairman: D. Del Moro

12:00 - 12:45 R. Benzi - Introduction to dynamical systems in physics

Chairman: G. Consolini

15:00 - 15:45 R. Benzi - Introduction to dynamical systems in physics

16:00 - 16:45 V. Carbone - Turbulence in space plasmas

17:00 - 17:45 V. Carbone - Turbulence in space plasmas

**Tuesday, 2**

Chairman: D. Del Moro

11:00 - 11:45 T. Alberti - Dynamical systems approaches and chaos in Sun-Earth's relations

12:00 - 12:45 R. Donner - Recurrence quantification analysis approaches to complex system dynamics

Chairman: G. Consolini

15:00 - 15:45 R. Donner - Recurrence quantification analysis approaches to complex system dynamics

16:00 - 16:45 S. Wing - Information theory approaches in Sun-Earth's relations

17:00 - 17:45 S. Wing - Information theory approaches in Sun-Earth's relations

### **Wednesday, 3**

Chairman: D. Del Moro

11:00 - 11:45 T. Alberti - Dynamical systems approaches and chaos in Sun-Earth's relations

12:00 - 12:45 G. Consolini - Dynamical complexity in the Earth's magnetospheric dynamics

Chairman: G. Consolini

15:00 - 15:45 P. De Michelis - Turbulence and scaling features in the ionospheric dynamics

16:00 - 16:45 G. Salina - An introduction to machine learning methods in physics

17:00 - 17:45 G. Salina - An introduction to machine learning methods in physics

### **Thursday, 4**

Chairman: D. Del Moro

11:00 - 11:45 G. Consolini - Dynamical complexity in the Earth's magnetospheric dynamics

12:00 - 12:45 M. Piana - Machine learning and flare forecasting

Chairman: G. Consolini

15:00 - 15:45 M. Piana - Machine learning and flare forecasting

16:00 - 16:45 G. Balasis - Entropic measures and magnetospheric dynamics

17:00 - 17:45 G. Balasis - Entropic measures and magnetospheric dynamics

## **Friday, 5**

Chairman: D. Del Moro/ G. Consolini

11:00 - 11:45 D. Del Moro - Hands-on session in machine learning techniques

12:00 - 12:45 C. Campi - Machine learning methods in Space Weather

Chairman: G. Consolini

15:00 - 15:45 C. Campi - Machine learning methods in Space Weather

16:00 - 16:45 D. Del Moro - Hands-on session in machine learning techniques

16:50                              Conclusions