

## A mathematical journey into solar physics and space weather

*Anna Maria Massone*

Università degli Studi di Genova

The Sun is an enigmatic star that produces some of the most powerful explosive events in the heliosphere, such as solar flares and coronal mass ejections (CMEs). Studying these eruptions can provide a unique opportunity to better understand both fundamental processes on the Sun and their space weather impacts at Earth. This talk will describe how mathematical models and computational tools can be effective in solving image reconstruction, image processing and forecasting problems, so providing a crucial key to the comprehension of this kind of solar physics and space weather open science issues.