

FIRST RESULTS FROM THE SEP ORIGIN PROJECT

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The origin of solar energetic particles: solar flares vs. coronal mass ejections

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SEP origin project

Research collaboration and network

[HOME](#)[WORK PACKAGES](#)[TEAM](#)[RESULTS](#)[OUTREACH](#)

Project title:

The origin of solar energetic particles: solar flares vs. coronal mass ejections

Call for proposals

Competition for financial support for bilateral projects 2016 – Bulgaria – Russia

Duration: 2 years

Start date: 23 June 2017

PI (Bulgaria): *Rositsa Miteva*

PI (Russia): *Larisa Kashapova*

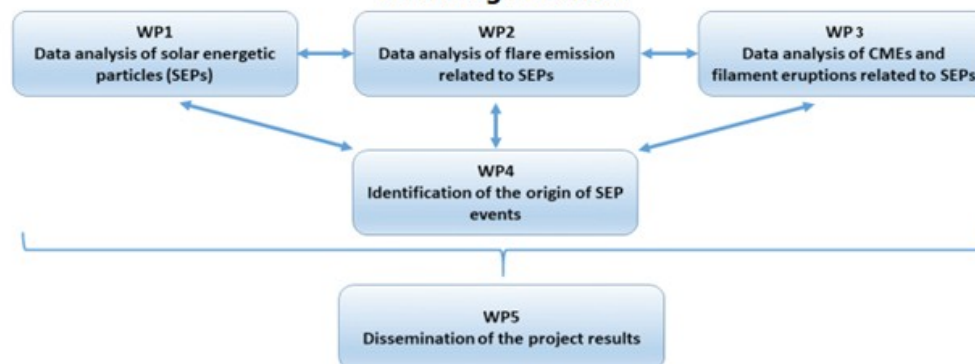
Objectives

The goal of the project is to identify the individual contribution of flares vs. CMEs to the resultant flux of solar energetic particles by means of observations.

Different working hypotheses will be tested: there is one primary particle accelerator for the entire SEP population; there is a mixed contribution from flares and CMEs that vary from event to event; the injection and transport processes are the dominant factors compared to acceleration.

Large statistical studies will be complemented with detailed event analysis (using also data from the Russian satellites Vernov and CORONAS-F SONG and from the ground-based Rozhen observatory in Bulgaria).

Work organization



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Project organization chart within work packages and tasks

Leader: I. Maygkova

WP1: Data analysis of solar energetic particles (SEPs)

- T1.1 SOHO/ERNE proton catalog **poster in progress**
- T1.2 Detailed analysis of well-observed SEPs **in progress**
- T1.3 Timing, spatial and spectral studies of selected SEPs **year II**

Leader: N. Meshalkina

WP2: Data analysis of flare emission related to SEPs

- T2.1 Multi-frequency and spectral analysis of solar flares **in progress**
- T2.2 3D magnetic field reconstruction **in progress**
- T2.3 SEP escape deduced from radio observations **year II**

Leader: N. Petrov

WP3: Data analysis of CMEs and filament eruptions related to SEPs

- T3.1 CME analysis **year II**
- T3.2 SEP-related eruptive prominences **poster in progress**
- T3.3 Effect of multiple-CME interactions on SEPs **year II**

WP4: Identification of the origin of SEP events **year II**

Leader: L. Kashapova

WP5: Dissemination of the project results

- T5.1 Scientific dissemination **in progress**
- T5.2 Popular dissemination **in progress**
- T5.3 On-line repository and web-site **completed**

Leader: R. Miteva

WP5: Dissemination of the project results

Task 5.1 Scientific dissemination

Project meetings

Kick-off meeting (Sofia, 2017)

First-year meeting (Primorsko, 2018)

Progress meeting (Irkutsk, 2018)

Scientific meetings

2017 (6)

2018 (6 planned)

Talks (8) & Posters (12)

Publications in science journals

refereed with IF (1)

(JSWSC)

refereed without IF (1)

(Sun and Geosphere)

non-refereed (6)

(proceedings)

submitted, under revision (4)

Task 5.2 Popular dissemination

Facebook page and public group

<https://www.facebook.com/SEPorigin>

Twitter

<https://twitter.com/SEPorigin>

Seminars to public

R. Miteva (scheduled public lecture)

R. Miteva (public astro-seminar)

N. Petrov (webinar)

R. Miteva (public lecture)

with presentations (as pdf) available on-line

Task 5.3 Online repository and web-site

www.newserver.stil.bas.bg/SEPorigin