Refined team and meeting objectives

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Project’s layout

- The project’s initial scope
- The project’s three key questions
- Objectives of the Flare Forecasting ISSI Meetings
- Current state and developments
- How to reconcile
- Proposed modified project’s outcome

A review p. on solar flare prediction / draft skeleton on Thu
The project’s scope

To improve the reliability of solar eruption predictions in order to facilitate the determination of targets-of-opportunity for instruments with a limited field of view

Target instruments:

- Partial-disk FOV, such as DKIST and similar vector magnetographs
- Full-disk FOV, such as SDO/HMI, SOLIS, and similar (for a possible advance knowledge of which disk area could be potentially flaring)
The project’s three key questions

1. Do flaring sunspot groups emerge as unstable structures, or do they evolve, once emerged, to become unstable?

2. How do sunspot groups build up the energy that is released in eruptions, and what triggers the release?

3. What is the degree of stochasticity in flare occurrence? Can the onset of flares and eruptions, in general, be predicted in a practical manner?
The project’s layout

A series of two ISSI meetings:

1. First meeting, 26 - 30 January 2015

Objectives:

❖ A catalogue of flare-prediction parameters and sunspot-group properties whose timeseries are to be scrutinized for the second meeting

❖ A meeting report, that may evolve into a flare-prediction review paper, summarizing the current state of the field, to be the first flare prediction reference for the partial-disk observer
The project’s layout

A series of two ISSI meetings:

2. Second meeting, 24 - 28 October 2016

Objectives (envisioned):

❖ A document describing the predictive parameters, precursors, and sunspot-group properties, both static and time-dependent, that are most efficient for the process of selecting ToOs for limited-FOV instruments

❖ The first open and collaborative network for cross-comparing different flare forecasting methods based on sunspot tracking and characterization, physical properties and statistical algorithms

❖ A refereed paper describing the envisioned future trends in solar flare prediction and flare observations by limited-FOV instruments
Present state and developments


Different flare forecasting services either at work ... or under implementation

How can we reconcile the original objectives of this project with current developments in the field?
Proposed course of action

First meeting objectives
- Catalogue of flare predictors & timeseries
- Meeting report to evolve into flare prediction review for limited-FOV instruments

Second meeting objectives
- Document describing efficient properties & property timeseries for selecting ToOs
- Collaborative framework of cross-comparison for different methods
- Refereed paper describing future trends

Identify what is missing — make a lasting impact from this collective initiative
A review paper on flare prediction

Discuss, work on and produce a refereed flare forecasting review paper that:

(1) poses the fundamental questions to address for an efficient flare prediction and gives current state of the art

(2) summarizes and categorizes existing flare predictors and prediction methods

(3) discusses sufficiently limited-FOV instruments and how to best identify ToOs

(4) Aims to identify / highlight future trends in the field, placing flare prediction in context with other SWX forecasting efforts

Fundamental questions already set (but may need revisions or additions)

Needed material is out there, but should be included meaningfully & intuitively

Literature search and synthesis, but also experience and intuition are needed here

A projection about future flare prediction, but also connection with other forecasting efforts
Outline of this working week

- **Mon - Wed**: Presentations by team members (Mon - Wed)
- **Thu, am hours**: Convergence on a tentative skeleton for the review paper - action items and section ownership, if applicable
- **Thu, pm hours**: Final presentations and general discussion / question session
- **Fri, am hours**: Concluding remarks and final arguments
- **Fri, noontime (max)**: end of meeting