

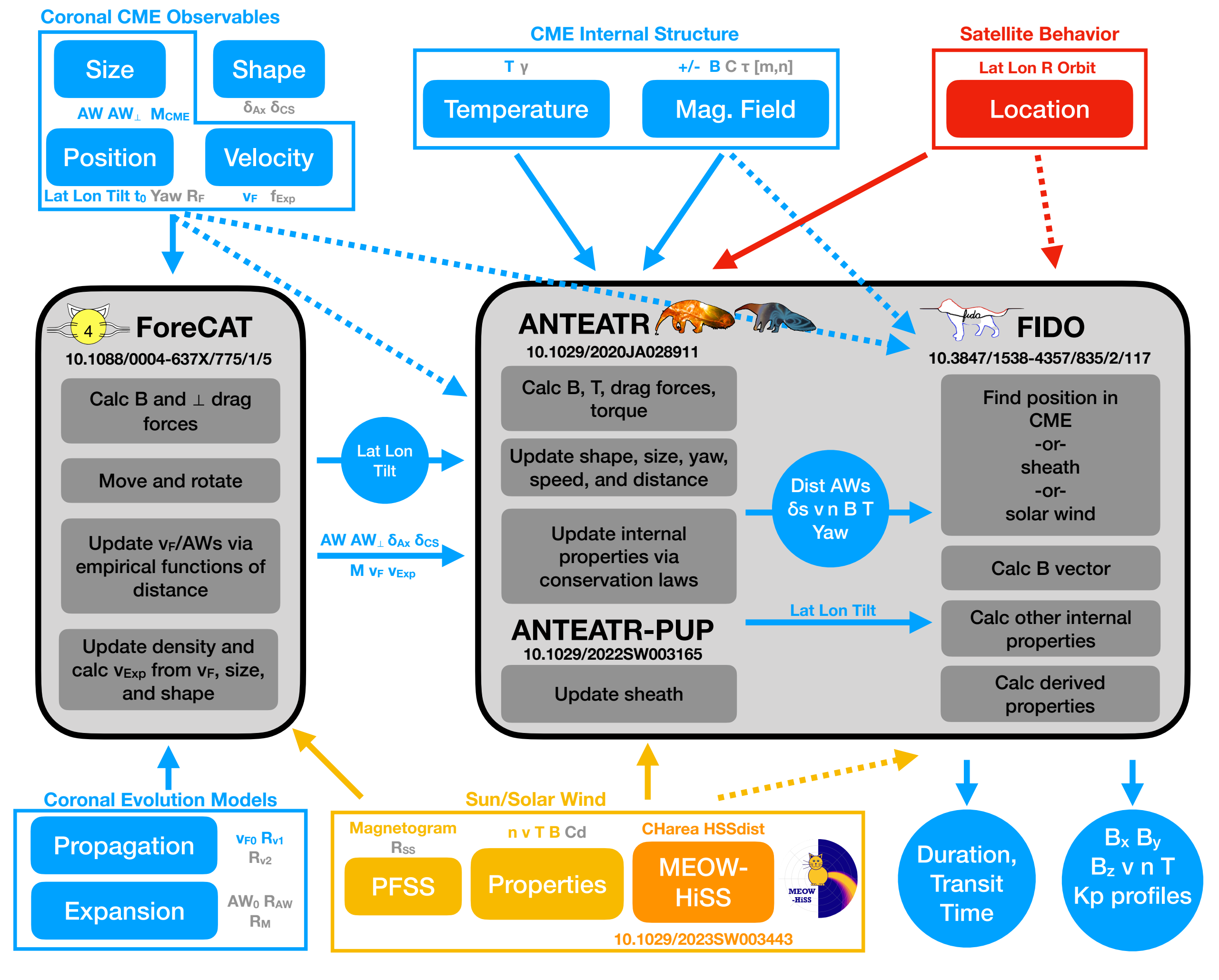


OSPReI RUNS ON REQUEST

C. KAY (NASA GSFC/CUA)

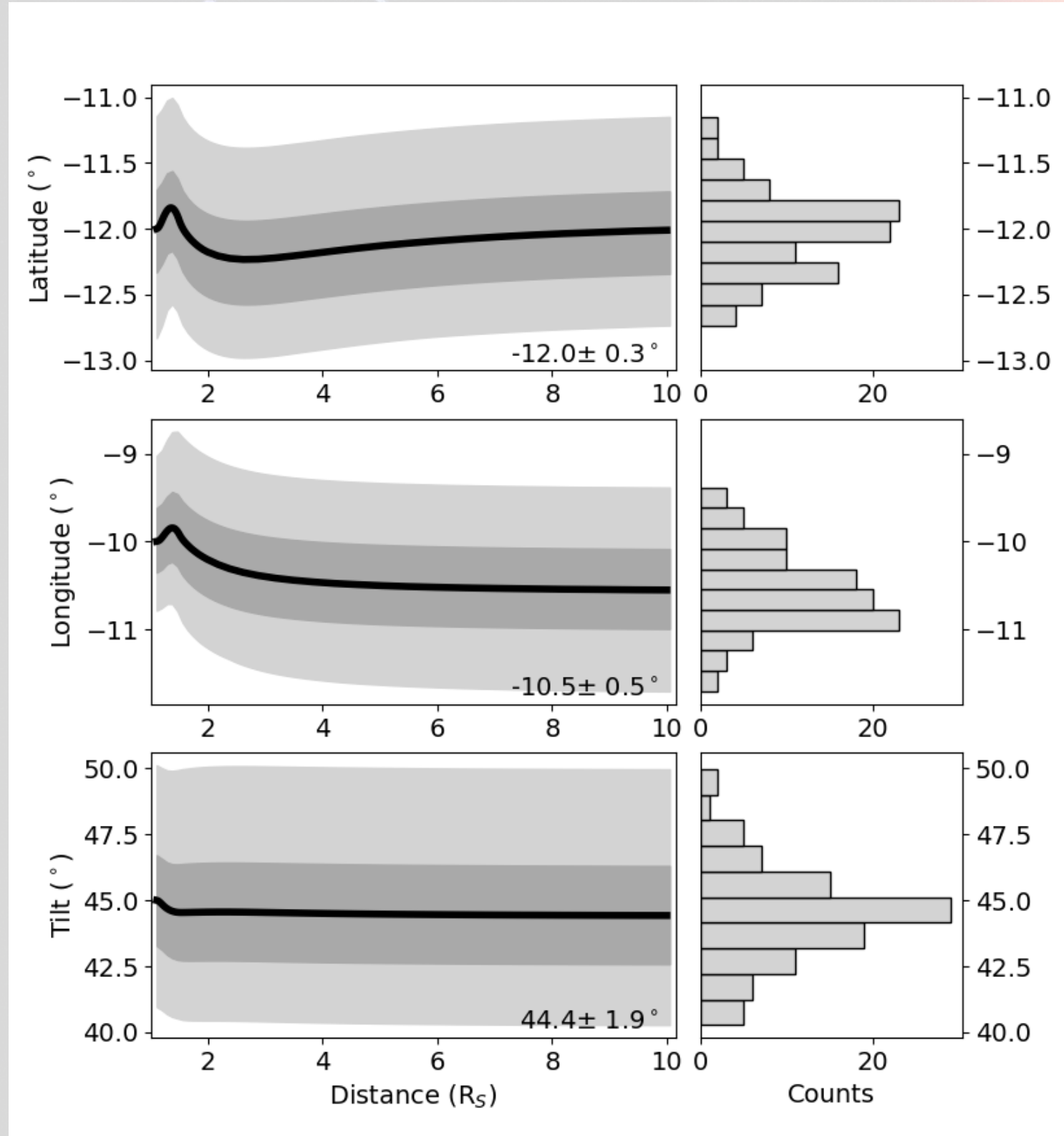
OSPReI.SPACE
CHRISTINA.D.KAY@NASA.GOV
OSPReIMODEL@GMAIL.COM

- ▶ THREE FULLY-COUPLED USER-FRIENDLY MODELS DESCRIBING THE EVOLUTION OF CME WITH AUTOMATICALLY-GENERATED VISUALIZATIONS
- ▶ **FORECAT** - CORONAL DEFLECTION AND ROTATION OF CMES FROM BACKGROUND MAGNETIC FORCES
- ▶ **ANTEATR** - IP PROPAGATION INCLUDING DRAG, CME EXPANSION, DEFORMATION, AND ROTATION
- ▶ **FIDO** - SYNTHETIC IN SITU PROFILES (MAGNETIC FIELD AND PLASMA PROPERTIES)
- ▶ ENSEMBLE SIMULATIONS

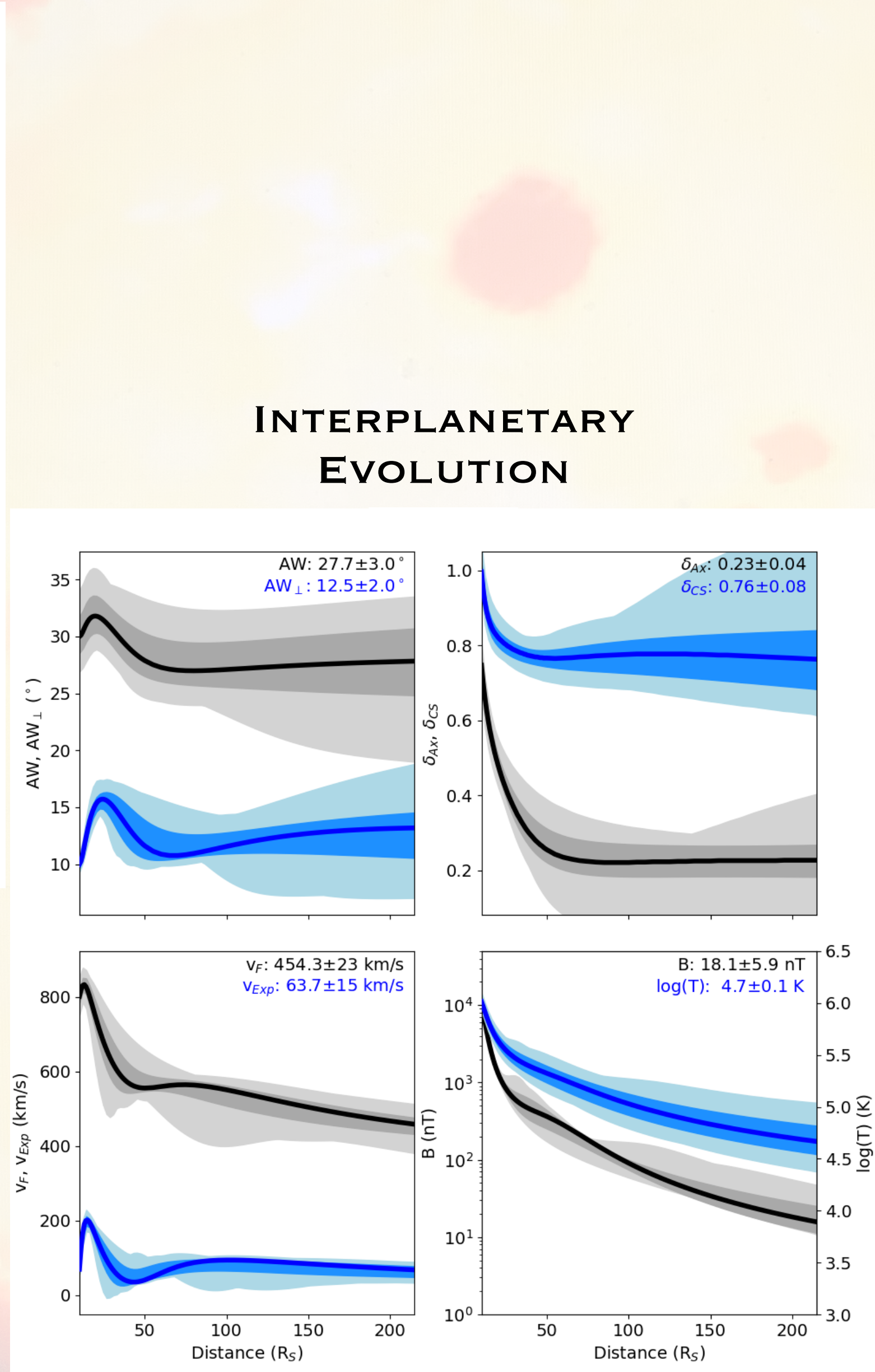


KAY+ (2022)
OSPREDI.SPACE
[GITHUB.COM/CKAY314/OSPREDI](https://github.com/CKAY314/OSPREDI)

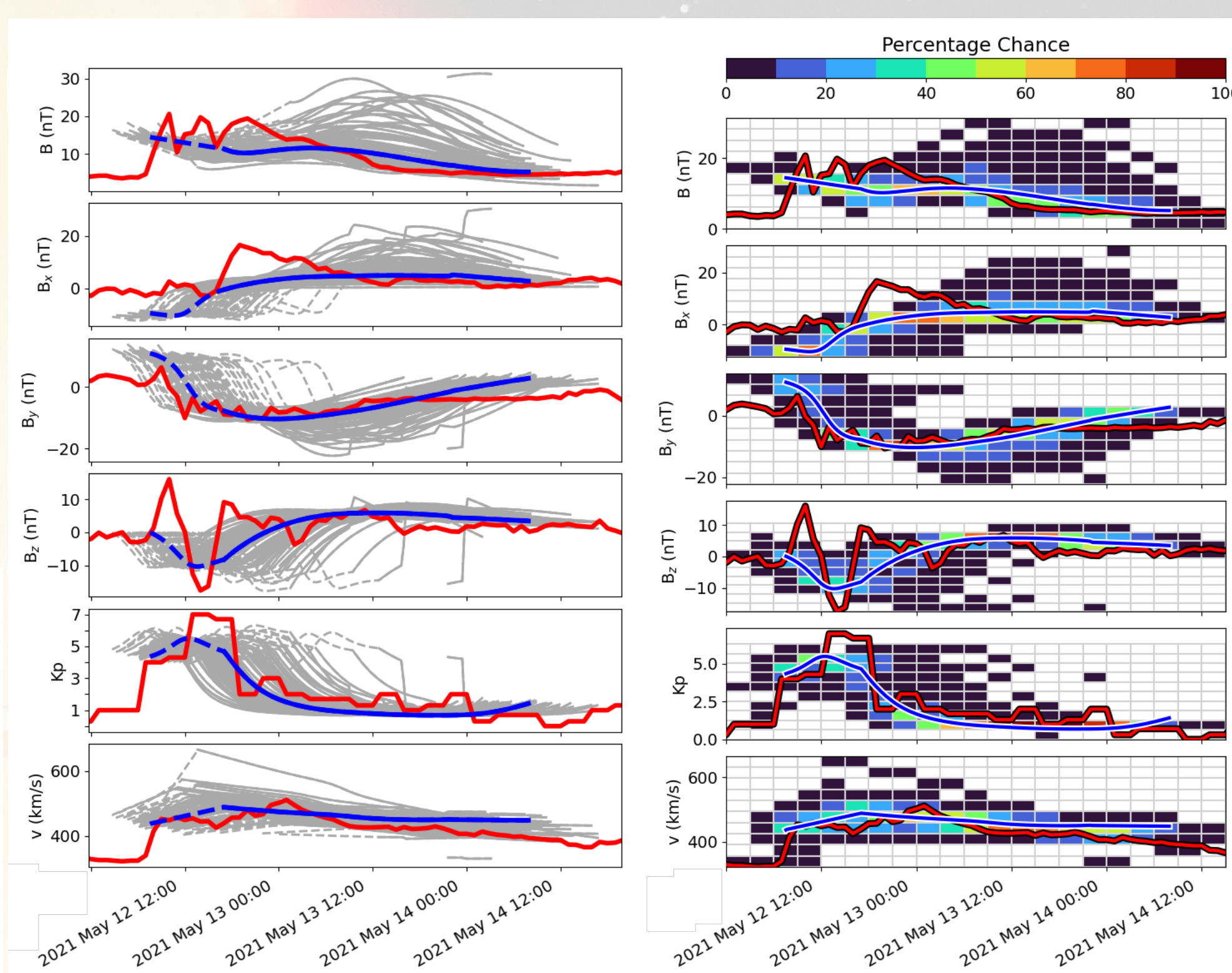
OSPREDI EXAMPLE RESULTS



CORONAL
DEFLECTION AND
ROTATION



INTERPLANETARY
EVOLUTION

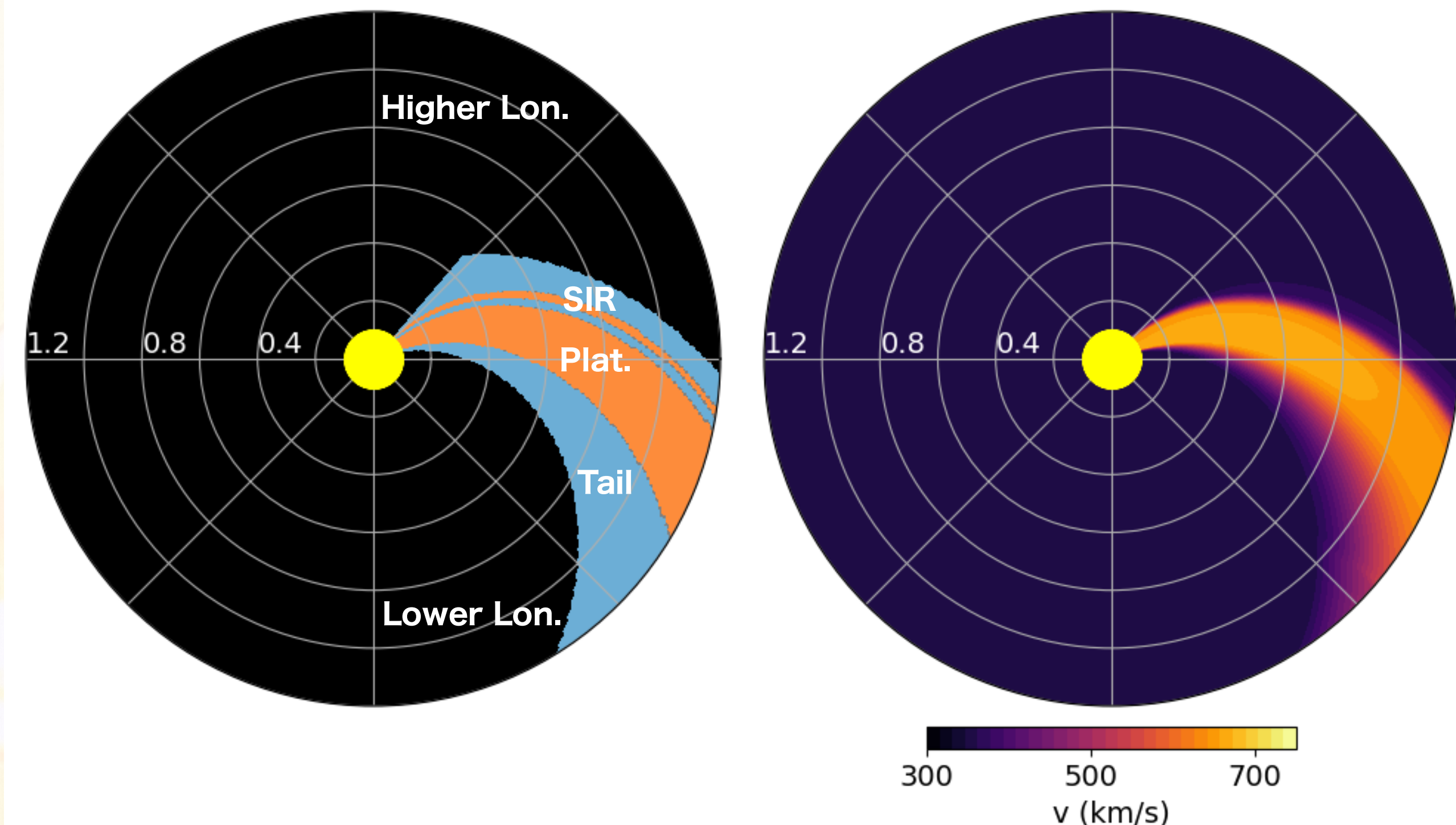
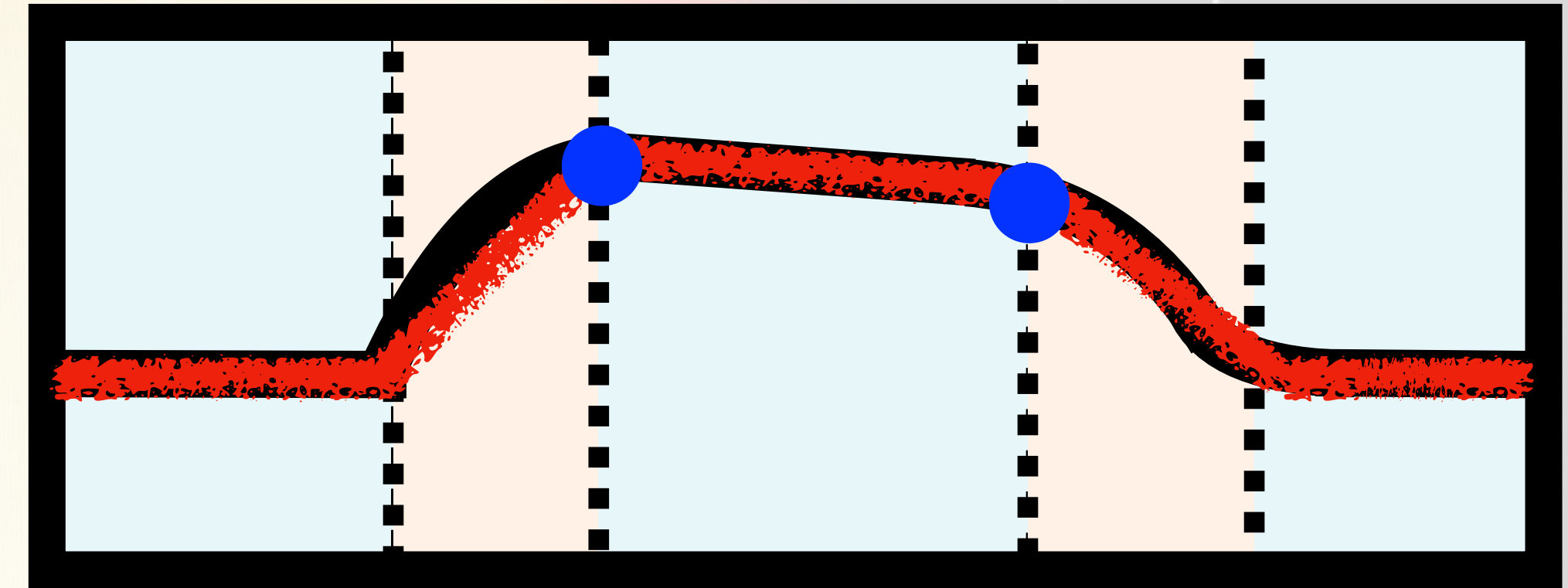


IN SITU PROFILES
AND HEAT MAP

KAY+ (2022)

MEOW-HISS

- ▶ NEW TIME-DEPENDENT EMPIRICAL HSS MODEL
 - ▶ STARTED WITH MHD SIMULATIONS OF HSS FROM IDEALIZED CH
 - ▶ SPLIT INTO REGIONS AND MAP PROFILES TO **SIMPLE SEGMENTS** WITH **CONSTRAINING POINTS**
 - ▶ LAYERED REGRESSIONS RELATING THE BEHAVIOR OF THESE **POINTS** TO CH AREA AND HSS DISTANCE
- ▶ INSTANTANEOUSLY GENERATES 1D PROFILE GIVEN ONLY CH AREA AND HSS DISTANCE
- ▶ USE SOLAR ROTATION TO MAKE 2D



RUNS ON REQUEST INTERFACE

OSPREI User Registration | CC x

ccmc.gsfc.nasa.gov/requests/SH/OSPRED/ospred_user_registration.php

★ ABP G S A | 三 i



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Request an OSPREI Model Run

Please complete the form below. * Indicates a required field.

****You must agree to the CCMC DATA Collection Consent Agreement in order to submit a run****

Do you give your consent?

☒ **YES**

Step 1: GENERATE YOUR REQUEST

Your run results will be published online *under your Run Registration Number* (FirstName_LastName_MMDDYY_ModelType_RunNumber) e.g. John_Smith_032511_IT_1.

WORK OR SCHOOL EMAIL how to contact you	christina.d.kay@nasa.gov	Enter a valid work or school email address
FIRST NAME (GIVEN)* your given name	Christina	Enter your given name
LAST NAME (FAMILY)* your family name	Kay	Enter your family name
RUN NUMBER* max 15 runs per day	1	Unless you want to overwrite it
KEYWORD/S* helps to sort and search the results of simulations	pspTest	Enter a keyword

[HTTPS://CCMC.GSFC.NASA.GOV/REQUESTS/SH/OSPREDI/OSPREDI USER REGISTRATION.PHP](https://ccmc.gsfc.nasa.gov/requests/sh/osprei/osprei_user_registration.php)

BIT.LY/OSPREICCMC

RUNS ON REQUEST INTERFACE

OSPREI User Registration | CC x +

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_user_registration.php



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Request an OSPREI Model Run

Please complete the form below. * Indicates a required field.

****You must agree to the CCMC DATA Collection Consent Agreement in order to**

Do you give your consent?

☒ YES

Step 1: GENERATE YOUR REQUEST

Your run results will be published online *under your Run Registration Number* (FirstName_LastName_Smith_032511_IT_1).

WORK OR SCHOOL EMAIL

how to contact you

christina.d.kay@nasa.gov

Enter a valid address

FIRST NAME (GIVEN)*

your given name

Christina

Enter your gi

LAST NAME (FAMILY)*

your family name

Kay

Enter your fa

RUN NUMBER*

max 15 runs per day

1

Unless you w

KEYWORD/S*

helps to sort and search the results of simulations

pspTest

Enter a keyw

OSPREI User Registration | CC x +

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_user_registration.php

Step 2: Simulation Start

The date must be specified. This should be the start time of the simulation. If ForeCAT is run then this should be the start of the eruption. If only the IP component is run this should be the time the CME reaches your inner boundary (default is 21.5 Rs/0.1 AU).

Start date and time*

YYYY-MM-DD HH:MM

2022-01-26 20:30

Select or type a valid date and time in the suggested format, e.g. 2016-01-15 15:21

Step 3: Model Configuration

☒ All

Include all OSPREI modules (ForeCAT + ANTEATR + FIDO)

☐ noB

Include ForeCAT and ANTEATR

☐ IP

Include ANTEATR and FIDO

☐ FC

Include ForeCAT only

☐ ANT

Include ANTEATR only

☐ FIDO

Include FIDO only

CONTINUE

RESET

OPTIONAL: SPECIAL REQUEST

ONLY if you require a customized simulation setup not provided by the standard submission options. Unlike the standard runs that are automatically processed, special requests are reviewed and manually modified by the CCMC staff. Please note that special requests are reviewed and manually modified by the CCMC staff and are executed only if resources are available.

JUSTIFICATION

brief description

[HTTPS://CCMC.GSFC.NASA.GOV/REQUESTS/SH/OSPREI/OSPREI_USER_REGISTRATION.PHP](https://ccmc.gsfc.nasa.gov/requests/SH/OSPREI/OSPREI_USER_REGISTRATION.PHP)

[BIT.LY/OSPREICCMC](https://bit.ly/ospreiccmc)

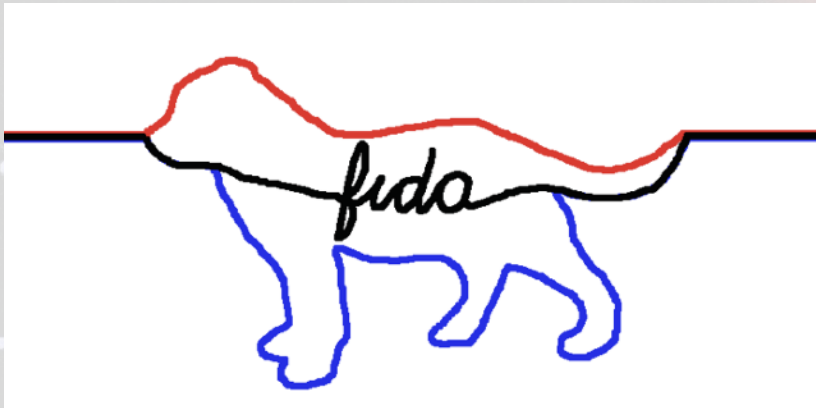
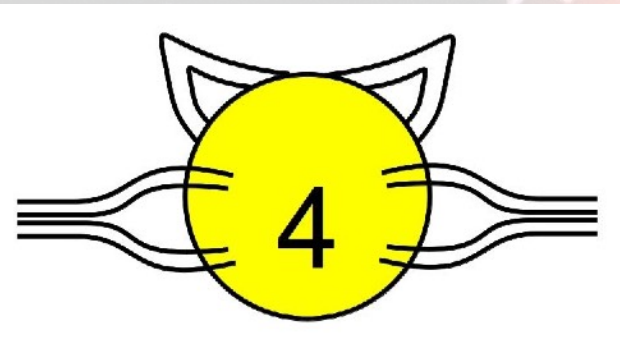
C. KAY

CCMC WORKSHOP 2024

5

MODEL OPTIONS

- ▶ CAN RUN MOST COMBINATIONS OF THE COMPONENTS
 - ▶ **NO FORECAT + FIDO (SKIPPING THE MIDDLE)**



	ALL (0)	NO B (1)	IP (2)	FC (3)	ANT (4)	FIDO (5)
FORECAT (CORONA)	X	X		X		
ANTEATR (IP)	X	X	X		X	
FIDO (IN SITU)	X		X			X

BASIC INPUTS

OSPREI Model Options | CCM

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_model_options.php

ABP

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Parameters for model configuration: All

Please complete the form below. * Indicates a required field.

I want to configure

Basic set of parameters ▾

Ensemble Request

Number of OSPREI runs

1

$0 \leq X \leq 200$?

Target Source

satellite*

Choose a value ▾

?

PFSS Info

Magnetogram source*

Choose a value ▾

?

CME Properties

BASIC INPUTS

OSPREI Model Options | CCM

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_model_options.php

Target Source

satellite*
Choose a value ?

PFSS Info

Magnetogram source*
Choose a value ?

CME Properties

Radial distance of the CME at the start of the simulation

[Rs] ?

CME latitude*

$-90 \leq X \leq 90$ [deg] ?

CME longitude*

$0 \leq X \leq 360$ [deg] ?

CME tilt*

$-90 \leq X \leq 90$ [deg] ?

CME velocity*

$0 < X$ [km/s] ?

CME AW (face on)*

$5 \leq X \leq 180$ [deg] ?

CME AWp (edge on)

$5 \leq X \leq 90$ [deg] ?

CME Mass

$0.1 < X$ [10^{15} g] ?

Aspect ratio - central axis

0.75

$0.1 \leq X \leq 1.5$?

Aspect ratio - cross section

1

$0.1 \leq X \leq 1.5$?

CONTINUE

RESET

BASIC INPUTS

The screenshot shows the 'OSPREI Model Options' web interface. The browser address bar is highlighted with a purple box, showing the URL: `ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_model_options.php`. The interface is divided into three main sections: 'Target Source', 'PFSS Info', and 'CME Properties'. Each section contains input fields for various parameters, with some fields having default values and others having ranges or units specified.

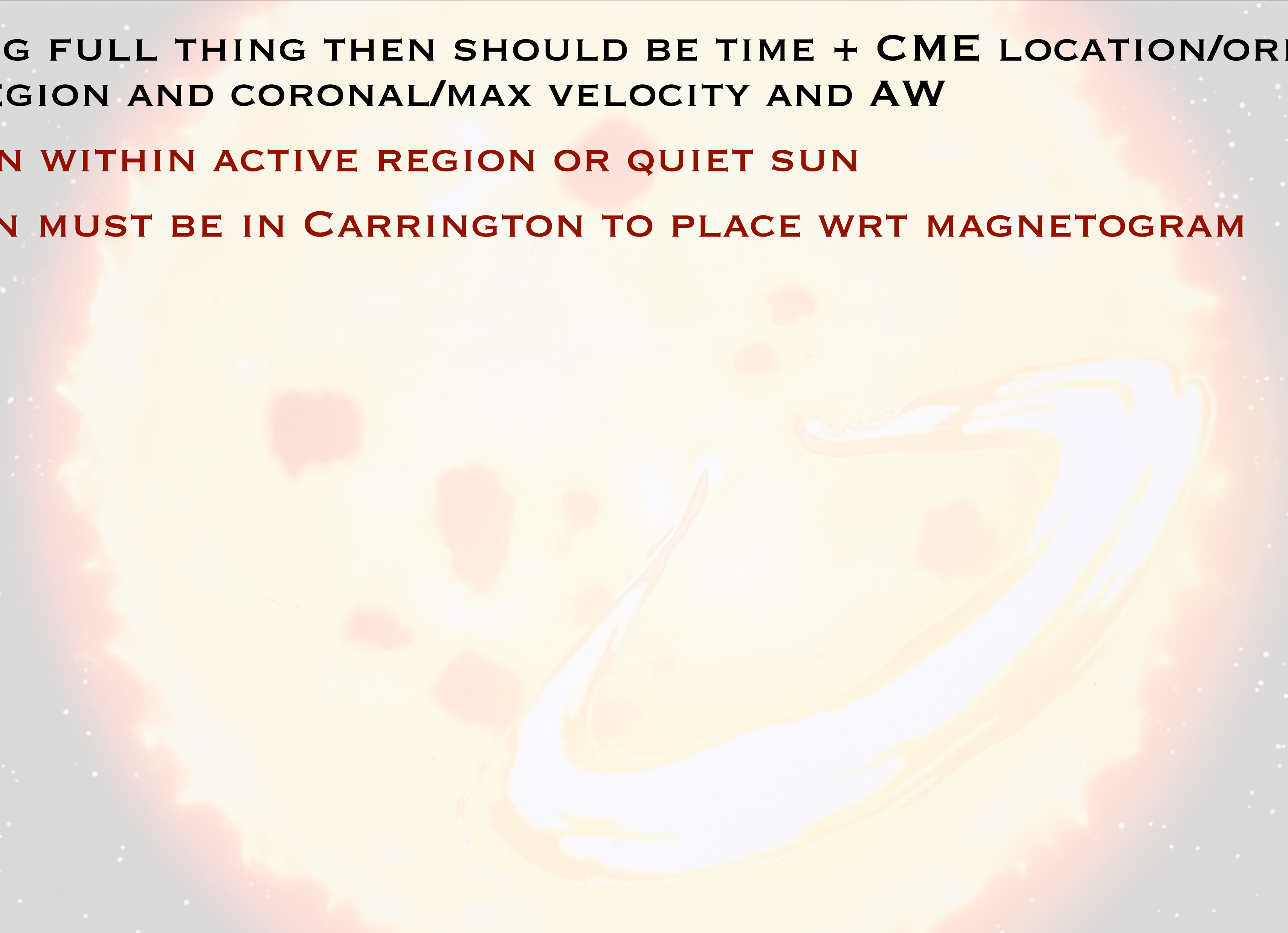
Section	Parameter	Input Type	Default/Range/Unit
Target Source	satellite*	Dropdown	Choose a value
	Magnetogram source*	Dropdown	Choose a value
CME Properties	Radial distance of the CME at the start of the simulation	Text	[Rs]
	CME latitude*	Text	$-90 \leq X \leq 90$ [deg]
	CME longitude*	Text	$0 \leq X \leq 360$ [deg]
	CME tilt*	Text	$-90 \leq X \leq 90$ [deg]
	CME velocity*	Text	$0 < X$ [km/s]
	CME AW (face on)*	Text	$5 \leq X \leq 180$ [deg]
	CME AWp (edge on)	Text	$5 \leq X \leq 90$ [deg]
	CME Mass	Text	$0.1 < X$ [10^{15} g]
	Aspect ratio - central axis	Text	0.75, $0.1 \leq X \leq 1.5$
	Aspect ratio - cross section	Text	1, $0.1 \leq X \leq 1.5$

At the bottom of the form, there are two buttons: 'CONTINUE' and 'RESET'.

- ▶ CAN RUN FULL OSPREI WITH ONLY 8 INPUTS
 - ▶ START TIME
 - ▶ SATELLITE
 - ▶ EARTH, STEREOs, PSP, SOLO
 - ▶ MAGNETOGRAM SOURCE
 - ▶ GONG, SOON HMI
 - ▶ CME LATITUDE
 - ▶ CME LONGITUDE
 - ▶ CME TILT
 - ▶ CME VELOCITY
 - ▶ CME AW
- ▶ REMAINING ALL HAVE DEFAULT VALUES

HOW TO INPUTS?

- ▶ **IF RUNNING FULL THING THEN SHOULD BE TIME + CME LOCATION/ORIENTATION AT SOURCE REGION AND CORONAL/MAX VELOCITY AND AW**
- ▶ **LOCATION WITHIN ACTIVE REGION OR QUIET SUN**
- ▶ **CME LON MUST BE IN CARRINGTON TO PLACE WRT MAGNETOGRAM**



HOW TO INPUTS?

- ▶ **IF RUNNING FULL THING THEN SHOULD BE TIME + CME LOCATION/ORIENTATION AT SOURCE REGION AND CORONAL/MAX VELOCITY AND AW**
 - ▶ **LOCATION WITHIN ACTIVE REGION OR QUIET SUN**
 - ▶ **CME LON MUST BE IN CARRINGTON TO PLACE WRT MAGNETOGRAM**
- ▶ **IF RUNNING ONLY IP ONWARD THEN SHOULD BE CORONAL CME PROPERTIES AND TIME AT 21.5 Rs***
 - ▶ **GCS OR OTHER RECONSTRUCTION**
 - ▶ **CME LON IN STONYHURST RELATIVE TO EARTH**
 - ▶ **NO DEFAULT FOR TILT!!! BUT EVEN A ROUGH GUESS IS BETTER THAN DEFAULT**

HOW TO INPUTS?

- ▶ **IF RUNNING FULL THING THEN SHOULD BE TIME + CME LOCATION/ORIENTATION AT SOURCE REGION AND CORONAL/MAX VELOCITY AND AW**
 - ▶ **LOCATION WITHIN ACTIVE REGION OR QUIET SUN**
 - ▶ **CME LON MUST BE IN CARRINGTON TO PLACE WRT MAGNETOGRAM**
- ▶ **IF RUNNING ONLY IP ONWARD THEN SHOULD BE CORONAL CME PROPERTIES AND TIME AT 21.5 Rs***
 - ▶ **GCS OR OTHER RECONSTRUCTION**
 - ▶ **CME LON IN STONYHURST RELATIVE TO EARTH**
 - ▶ **NO DEFAULT FOR TILT!!! BUT EVEN A ROUGH GUESS IS BETTER THAN DEFAULT**
- ▶ **IF RUNNING ONLY FIDO THEN SHOULD BE CME PROPERTIES AT TIME OF ARRIVAL AT SPACECRAFT**
 - ▶ **NOT SURE HOW ONE WOULD HAVE A GOOD MEASURE OF THESE VALUES AT THAT TIME BUT THE MODEL OPTION EXISTS**

FANCY MODE

OSPREI Model Options | CCM x

ccmc.gsfc.nasa.gov/requests/SH/OSPRED/osprei_model_options.php

ForeCAT Settings

Transition between ForeCAT and ANTEATR

21.5

$10 \leq X \leq 50$ [Rs] ?

First critical distance in ForeCAT propagation model

1.3

$1 \leq X \leq 2$ [Rs] ?

Second critical distance in ForeCAT propagation model

10

$1.5 \leq X \leq 21.5$ [Rs] ?

Minimum velocity in ForeCAT propagation model

50

$10 \leq X \leq 200$ [km/s] ?

Minimum angular width in ForeCAT expansion model

5

$1 \leq X \leq 20$ [deg] ?

Rate of expansion in ForeCAT expansion model

1

$0.1 \leq X \leq (FCrmax-1)/4.61$ [Rs] ?
Should be less or equal to (FCrmax-1)/4.61

Distance of maximum mass in ForeCAT

21.5

$X \leq FCrmax$ [Rs] ?

Solar wind perpendicular drag coefficient

1

$0 \leq X \leq 10$?

Flux Rope Properties

Polarity/handedness of the Flux Rope

+1

?

Magnetic field strength of the CME Flux Rope

$500 \leq X \leq 10000$ [nT] ?

Temperature of the CME Flux Rope

$5000 \leq X \leq 1000000$ [K] ?

Flux rope tau

1

$0.1 \leq X \leq 3$?

Flux rope Cnm

1.927

$0.5 \leq X \leq 3$?



FANCY MODE

OSPREI Model Options | CCM x +

ccmc.gsfc.nasa.gov/requests/SH/OSPRED/osprei_model_option

ForeCAT Settings

Transition between ForeCAT and ANTEATR

21.5

First critical distance in ForeCAT propagation model

1.3

Second critical distance in ForeCAT propagation model

10

Minimum velocity in ForeCAT propagation model

50

Minimum angular width in ForeCAT expansion model

5

Rate of expansion in ForeCAT expansion model

1

Should be less or equal to (FCrmax-1)/4.61

Distance of maximum mass in ForeCAT

21.5

Solar wind perpendicular drag coefficient

1

Flux Rope Properties

Polarity/handedness of the Flux Rope

+1

Magnetic field strength of the CME Flux Rope

Temperature of the CME Flux Rope

Flux rope tau

1

Flux rope Cnm

1.927

OSPREI Model Options | CCM x +

ccmc.gsfc.nasa.gov/requests/SH/OSPRED/osprei_model_options.php

ANTEATR Settings

Initial velocity decomposition for ANTEATR

0.5

$0 \leq X \leq 1$?

Adiabatic index

1.33

$1 \leq X \leq 1.67$?

☐ doPUP

Simulate CME-driven sheath ?

☐ flagScales

Flag to switch to scaling CME B/T ?

Solar Wind Properties (at the Satellite)

Distance at which SW parameters are given

$10 \leq X \leq 350$ [Rs] ?

Solar wind number density

7.5

$0.1 \leq X \leq 50$ [cm⁻³] ?

Solar wind radial velocity

350

$50 \leq X \leq 800$ [km/s] ?

Solar wind magnetic field strength

6

$-50 \leq X \leq 50$ [nT] ?
Valid range: [-50, -0.1] and [0.1, 50]

Solar wind temperature

75000

$10000 \leq X \leq 5000000$ [K] ?

Solar wind drag coefficient

1

$1 \leq X \leq 10$?

MEOW-HISS Propertiess

☐ doMH

Simulate a high speed stream in the background solar wind ?

MEOW-HISS CH area

$50 \leq X \leq 2500$ [10⁸ km²] ?

MEOW-HISS HSS front distance

$-0.3 \leq X \leq 1.5$ [AU] ?

ENSEMBLES

The screenshot shows a web browser window with the URL `ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_ensemble_options.php`. The page is titled "OSPREDI Ensemble Options". It contains a form for configuring ensemble runs. At the top, it says "Please complete the form below. * Indicates a required field." Below this, it states "Number of OSPREI runs: 100". A note explains that values represent a maximum 'delta' value by which the model would randomly vary the parameter during each of the ensemble runs, and to leave a field empty if it should not vary. The form has a section "I want to configure" with a dropdown menu set to "Basic set of parameters". Below this is a section titled "Ensemble options" containing a list of parameters, each with a checkbox, a text input field, and a suggested range. The parameters are:

- ☐ `delta_CMElat`: 1, $0 \leq X \leq 30$ [deg]
- ☐ `delta_CMElon`: 1, $0 \leq X \leq 50$ [deg]
- ☐ `delta_CMEtilt`: 5, $0 \leq X \leq 60$ [deg]
- ☐ `delta_CMEvr`: 50, $0 \leq X \leq 1000$ [km/s]
- ☐ `delta_CMEAW`: 5, $0 \leq X \leq 30$ [deg]
- ☐ `delta_CMEAWp`: 2, $0 \leq X \leq 20$ [deg]
- ☐ `delta_CMEdelAx`: 0.1, $0 \leq X \leq 0.5$
- ☐ `delta_CMEdelCS`: 0.1, $0 \leq X \leq 0.5$
- ☐ `delta_CMEM`: 2, $0 \leq X \leq 50$ [10^{15} g]

At the bottom of the form are two buttons: "CONTINUE" and "RESET".

- ▶ CAN SHOW EITHER BASIC OR ADVANCED SET OF PARAMETERS
- ▶ CHECK BOX TO INCLUDE
 - ▶ SUGGESTED RANGE PROVIDED BUT CAN CHANGE
- ▶ ALL PARAMS VARY SIMULTANEOUSLY
- ▶ VALUES DRAW FROM NORMAL DISTRIBUTION

AND GO!

OSPREI User Registration | C x +

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_request_controller.php

☆ ABP C S 🔒 📁 📄 🧑

Please **CONFIRM** your selected options:

*If you would like to CHANGE any of the options selected below, please GO BACK and change your submission. Otherwise, proceed to submit your request.

Summary of your Run Registration Number: [Christina_Kay_053024_SH_1](#)

Email:

christina.d.kay@nasa.gov

First Name:

Christina

Last Name:

Kay

Run Number:

1

Keywords:

pspTest

Start Time:

2022-01-26 20:30

Models:

All (configuration 0)

Number of OSPREI runs:

100

MagFile:

mrmqs220125t1158c2253_000.fits.gz

Ensemble Request

Number of OSPREI runs:

100

Target Source

satellite:

PSP

PFSS Info

Magnetogram source:

GONG

Option to scale the PFSS magnetic field:

1

sunRss:

2.5

CME Properties

Radial distance of the CME at the start of the simulation:

1.1

CME latitude:

-18

CME longitude:

29.5

CME tilt:

45

CME velocity:

650

CME AW (face only):

45

AND GO!

OSPREI User Registration | C x +

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_request_controller.php

☆ ABP C S L C | ☰ 👤 ⋮

Please CONFIRM your selected options:

*If you would like to CHANGE any of the options selected below, please GO BACK and change your submission. Otherwise, proceed to submit your request.

Summary of your Run Registration Number: Christina_Kay_053024_SH_1

Email: christina.d.kay@nasa.gov

First Name: Christina

Last Name: Kay

Run Number: 1

Keywords: pspTest

Start Time: 2022-01-26 20:30

Models: All (configuration 0)

Number of OSPREI runs: 100

MagFile: mrmqs220125t1158c2253_000.fits.gz

Ensemble Request

Number of OSPREI runs: 100

Target Source

satellite: PSP

PFSS Info

Magnetogram source: GONG

Option to scale the PFSS magnetic field: 1

sunRss: 2.5

CME Properties

Radial distance of the CME at the start of the simulation: 1.1

CME latitude: -18

CME longitude: 29.5

CME tilt: 45

CME velocity: 650

CME AW (face only): 45

OSPREI User Registration | C x +

ccmc.gsfc.nasa.gov/requests/SH/OSPREI/osprei_request_controller.php

☆ ABP C S L C | ☰ 👤 ⋮

YOUR REQUEST HAS BEEN SUBMITTED!

Run Registration Number: Christina_Kay_053024_SH_1

Thank you Christina Kay, your request has been submitted on 2024-05-30 13:56:03 (GMT). You will receive an e-mail when the simulation(s) have finished. We appreciate your interest in the Community Coordinated Modeling Center.

Sincerely,
The CCMC Staff

Summary of your Run Registration Number: Christina_Kay_053024_SH_1

Email: christina.d.kay@nasa.gov

First Name: Christina

Last Name: Kay

Run Number: 1

Keywords: pspTest

Start Time: 2022-01-26 20:30

Models: All (configuration 0)

Number of OSPREI runs: 100

MagFile: mrmqs220125t1158c2253_000.fits.gz

Ensemble Request

Number of OSPREI runs: 100

Target Source

satellite: PSP

PFSS Info

Magnetogram source: GONG

Option to scale the PFSS magnetic field: 1

sunRss: 2.5

CME Properties

GETTING RESULTS

Dear Christina Kay,

Your run request: Christina_Kay_053124_SH_1 has been completed and is available for analysis on the CCMC web site:

https://ccmc.gsfc.nasa.gov/results/viewrun.php?runnumber=Christina_Kay_053124_SH_1

It is important to contact the model developers before you make any public presentation of these results.

The most current developer contact information can be found at our website: <https://ccmc.gsfc.nasa.gov>.

Please send us title and abstract of any presentation or publication you prepare with the simulation results.

Thank you for your interest in CCMC.

Sincerely,

Anne Michelle Mendoza,
Lutz Rastaetter,
Masha Kuznetsova
Community-Coordinated Modeling Center
<https://ccmc.gsfc.nasa.gov>

GETTING RESULTS

Dear Christina Kay,

Your run results are available at:

[https://ccmc.gsfc.nasa.gov/results/viewrun.php?runnumber=Christina_Kay_053124_SH_1](#)

It is important to check the status of your run.

The most common errors are:

Please send me an email if you have any questions.

Thank you for your contribution to the CCMC.

Sincerely,

Anne Michels

Lutz Rastae

Masha Kuznetsov

Community Manager

[https://ccmc.gsfc.nasa.gov](#)

Run information | CCMC

ccmc.gsfc.nasa.gov/results/viewrun.php?runnumber=Christina_Kay_053124_SH_1

Community Coordinated Modeling Center

FAQ | Contact

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Christina_Kay_053124_SH_1

Run Status: Run Complete

Status updated: 2024-05-31T20:05:54+0000

Run Metadata

Metadata Record:	View Full Run Metadata in the CCMC Metadata Registry (CMR)
Metadata as JSON:	View Full Run Metadata as JSON
Model Domain:	SH
Model Name:	OSPRI
Model Version:	1
Key Word:	psp
Models to run:	All
Name of the magnetogram file:	mrmqs220125t1158c2253_000.fits.gz
Number of OSPRI runs:	100
satellite:	PSP
Magnetogram source:	GONG
Option to scale the PFSS magnetic field:	1
sunRss:	2.5
Radial distance of the CME at the start of the simulation:	1.1
CME latitude:	-18
CME longitude:	29.5
CME tilt:	45
CME velocity:	650
CME AW (face on):	45

GETTING RESULTS

Dear Christina Kay,

Your run results are available at:

https://ccmc.gsfc.nasa.gov/results/viewrun.php?runnumber=Christina_Kay_053124_SH_1

It is important to note that the results are only available for the first 100 runs.

The most common errors are:

Please send an email to christina.kay@nasa.gov if you encounter any of these errors.

Thank you for your contribution to the CCMC community.

Sincerely,

Anne Michard

Lutz Rastner

Masha Kuznetsov

Community Manager

<https://ccmc.gsfc.nasa.gov>

Christina_Kay_053124_SH_1

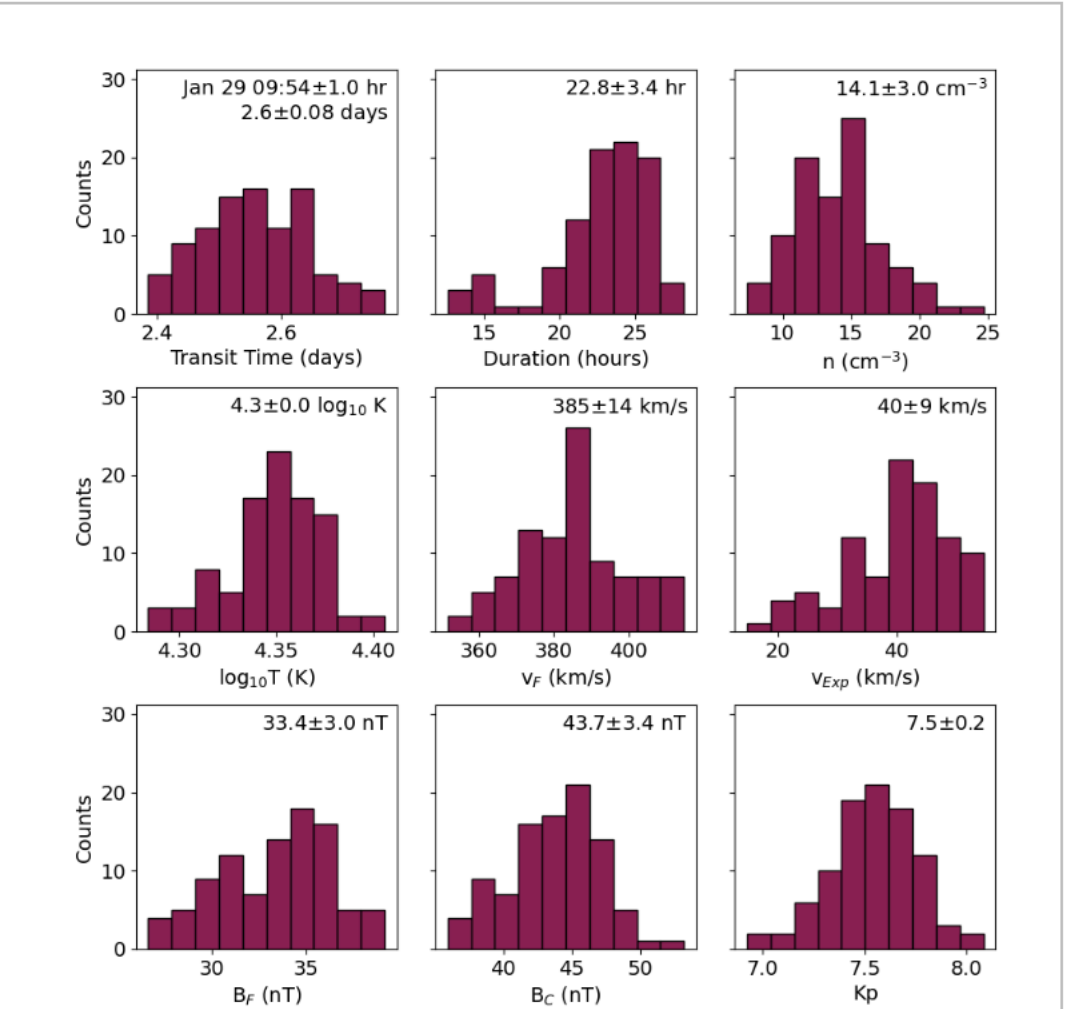
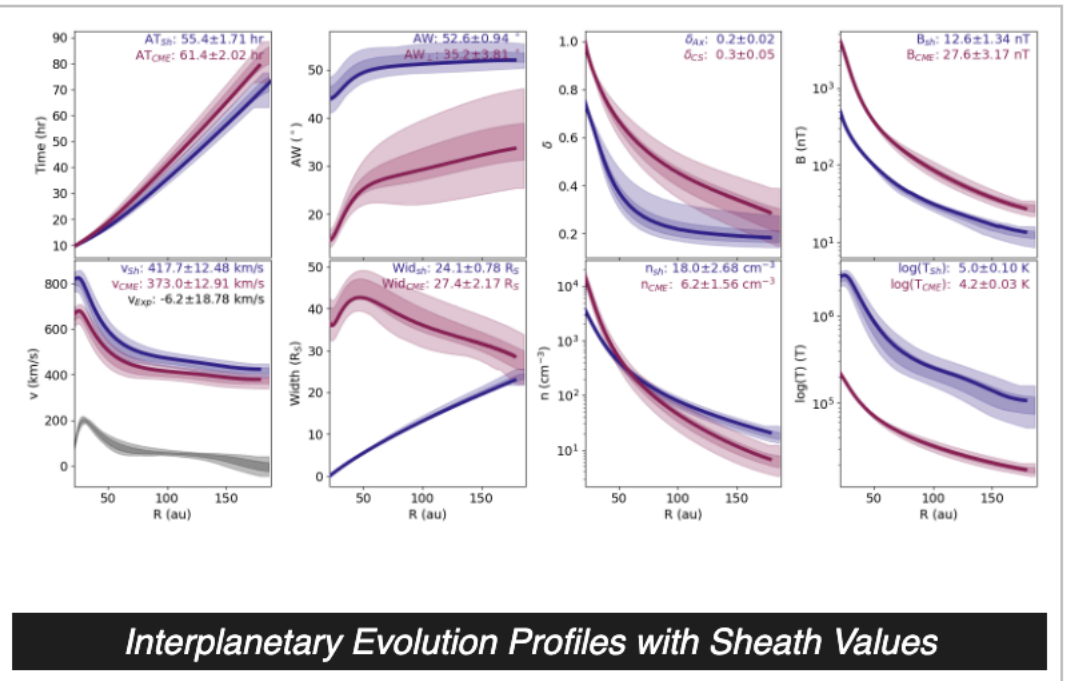
Run Status: Run Complete

Status updated: 2024-05-31T20:05:54+0000

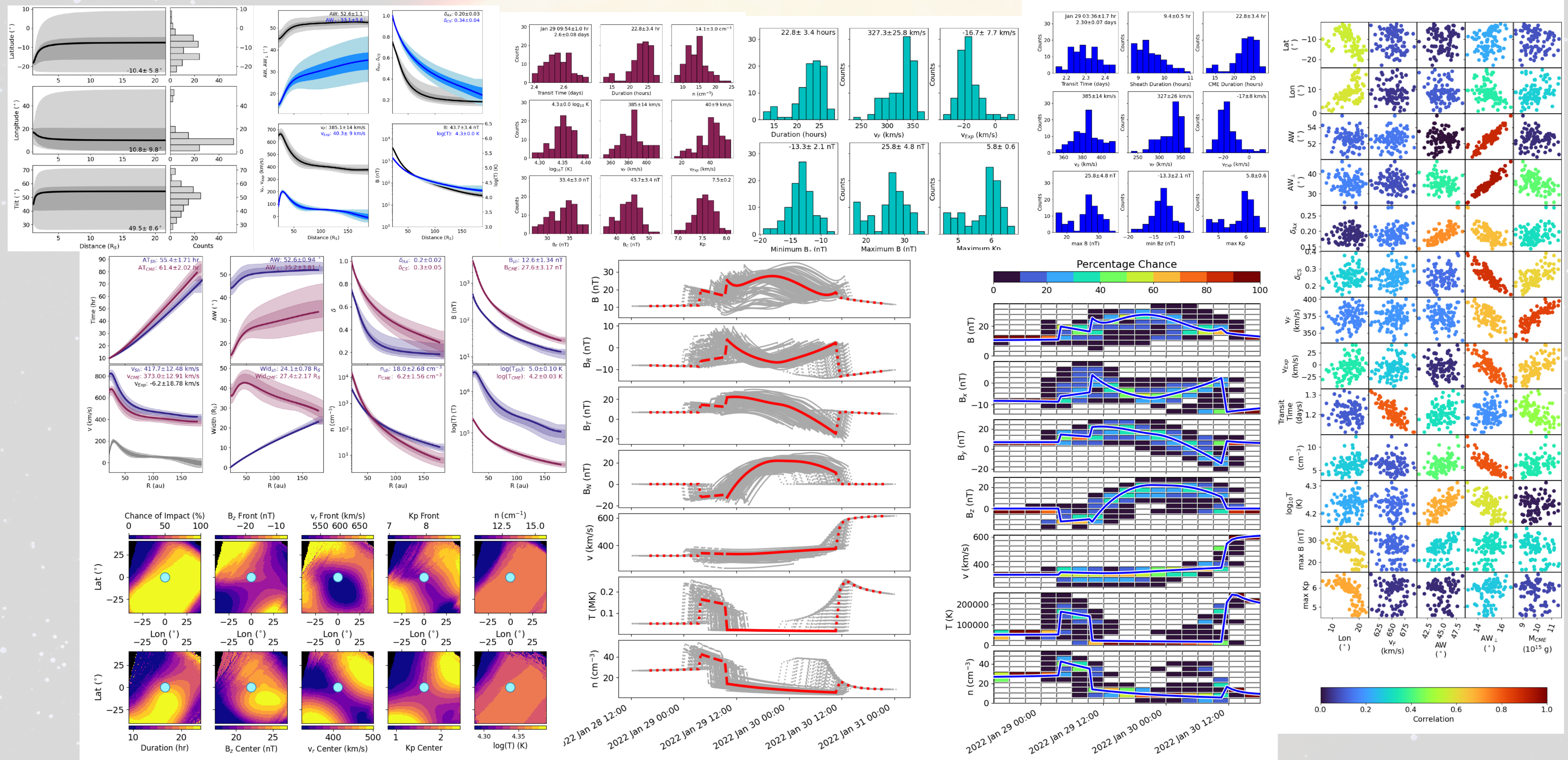
Run Metadata

Metadata Record:	View Full Run Metadata
Metadata as JSON:	View Full Run Metadata
Model Domain:	SH
Model Name:	OSPRED
Model Version:	1
Key Word:	psp
Models to run:	All
Name of the magnetogram file:	mrmqs220125t
Number of OSPRED runs:	100
satellite:	PSP
Magnetogram source:	GONG
Option to scale the PFSS magnetic field:	1
sunRss:	2.5
Radial distance of the CME at the start of the simulation:	1.1
CME latitude:	-18
CME longitude:	29.5
CME tilt:	45
CME velocity:	650
CME AW (face on):	45

Quick Look Graphics (?)



AUTOMATIC VISUALIZATIONS



RAW DATA

Run information | CCMC

ccmc.gsfc.nasa.gov/results/viewrun.php?runnumber=Christina_Kay_053124_SH_1

Histograms of Observed Exact Observed Interplanetary Properties at the Time of Arrival with Sheath Values

Run Services

Request output data as a single archive file

Browse output data

Runs with Overlapping Dates

Click on model name to expand the list

+ TIE-GCM

+ SEPMOD

+ NRLMSIS

+ JB

+ IRI

+ ENLIL

Similar Runs

No runs have been found matching the chosen set of metadata fields.

Click to expand and modify similarity search criteria

Accessibility

Privacy Policy

Data Consent Agreement

Curator: Tyler Schiewe

NASA Official: Dr. Masha Kuznetsova

Contact



RAW DATA

Run information | CCMC

Request output for a run (raw

ccmc.gsfc.nasa.gov/ComQues/request_output.php?run=Christina_Kay_053124_SH_1&domain=SH&m...

Request output for an executed CCMC run

Request raw or CDF-format output for a model run executed at the CCMC:

At the moment, CDF output is available only for select models: SWMF BATSRUS, OpenGGCM, LFM, ENLIL, CORHEL, TIE-GCM, CTIPe.

Raw run output is available for all [Runs-on-Request models](#).

Output is not available for instant runs.

Specify the run of interest and type of output:

Run Registration Number: Christina_Kay_053124_SH_1 (e.g., Joe_Smith_013117_SH_1).

Model of the request: OSPREI

Type of output:

raw run output

Below you can specify selected time steps or the interval of interest. If left blank, the output for the whole run will be uploaded to our webserver for your download.
Note that the download of large complete runs might take a very long time.

Your contact email

The link to download the run output files will be sent to this email address.

Submit

Clear Form

You can look up the Registration Run Number for your simulation of interest in the online [CCMC runs database](#).

RAW DATA

Run information | CCMC

Request output for a run (raw

ccmc.gsfc.nasa.gov/ComQues/request_output.php?run=Christina_Kay_053124_SH_1&domain=SH&m...

Request output for an executed CCMC run

Christina_Kay_053024_SH_1

Name	Size	Kind
UserInfo	104 bytes	Document
runScript_Christina_Kay_053024_SH_1.txt	832 bytes	Plain Text
runScript_Christina_Kay_053024_SH_1.ens	70 bytes	Document
run_OSPREI2	1 KB	Unix Ex...able File
run_OSPREI	35 bytes	Unix Ex...able File
ROR.log	3.1 MB	Log File
remote_run_system	31 bytes	Document
psp_temp.sat	6 KB	Document
PickleJar	--	Folder
osprei_control_file.txt	854 bytes	Plain Text
myPaths.txt	196 bytes	Plain Text
mrmqs220125t1158c2253_000.fits.gz.bak	244 KB	Document
Model_Type	2 bytes	Document
Model_SH	18 bytes	Document
DatabaselInfo	1 KB	Document
Christina_Kay_053024_SH_1.php	149 bytes	PHP script
check_complete.sh	930 bytes	shell script
20220126	--	Folder

Submit

Clear Form

You can look up the Registration Run Number for your simulation of interest in the online [CCMC runs database](#).

RAW DATA

Run information | CCMC

Request output for a run (raw

ccmc.gsfc.nasa.gov/ComQues/request_output.php?run=Christina_Kay_053124_SH_1&domain=SH&m...

Request output for an executed CCMC run

Christina_Kay_053024_SH_1

Name	Size	Kind
UserInfo	104 bytes	Document
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run_OSPREI	35 bytes	Unix Ex...able File
ROR.log	3.1 MB	Log File
remote_run_system	31 bytes	Document
psp_temp.sat	6 KB	Document
PickleJar	--	Folder
osprei_control_file.txt	854 bytes	Plain Text
myPaths.txt	196 bytes	Plain Text
mrmqs220125t1158c2253_000.fits.gz.bak	244 KB	Document
Model_Type	2 bytes	Document
Model_SH	18 bytes	Document
DatabaselInfo	1 KB	Document
Christina_Kay_053024_SH_1.php	149 bytes	PHP script
check_complete.sh	930 bytes	shell script
20220126	--	Folder

20220126

Name	Size	Kind
SIResults20220126Christina_Kay_053024_SH_1.dat	66 bytes	DAT file
PUPResults20220126Christina_Kay_053024_SH_1.dat	1 MB	DAT file
inputs.log	800 bytes	Log File
ForeCATResults20220126Christina_Kay_053024_SH_1.dat	927 KB	DAT file
fig20220126Christina_Kay_053024_SH_1_IS.png	82 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_FIDOhist.png	46 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_DragLess.png	114 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_CPAhist.png	40 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_CPA.png	39 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_Contours.png	67 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_ANTPUP.png	168 KB	PNG image
fig20220126Christina_Kay_053024_SH_1_ANThist.png	66 KB	PNG image
FIDOResults20220126Christina_Kay_053024_SH_1.dat	15 KB	DAT file
EnsembleParams20220126Christina_Kay_053024_SH_1.dat	5 KB	DAT file
ANTEATRResults20220126Christina_Kay_053024_SH_1.dat	2.7 MB	DAT file

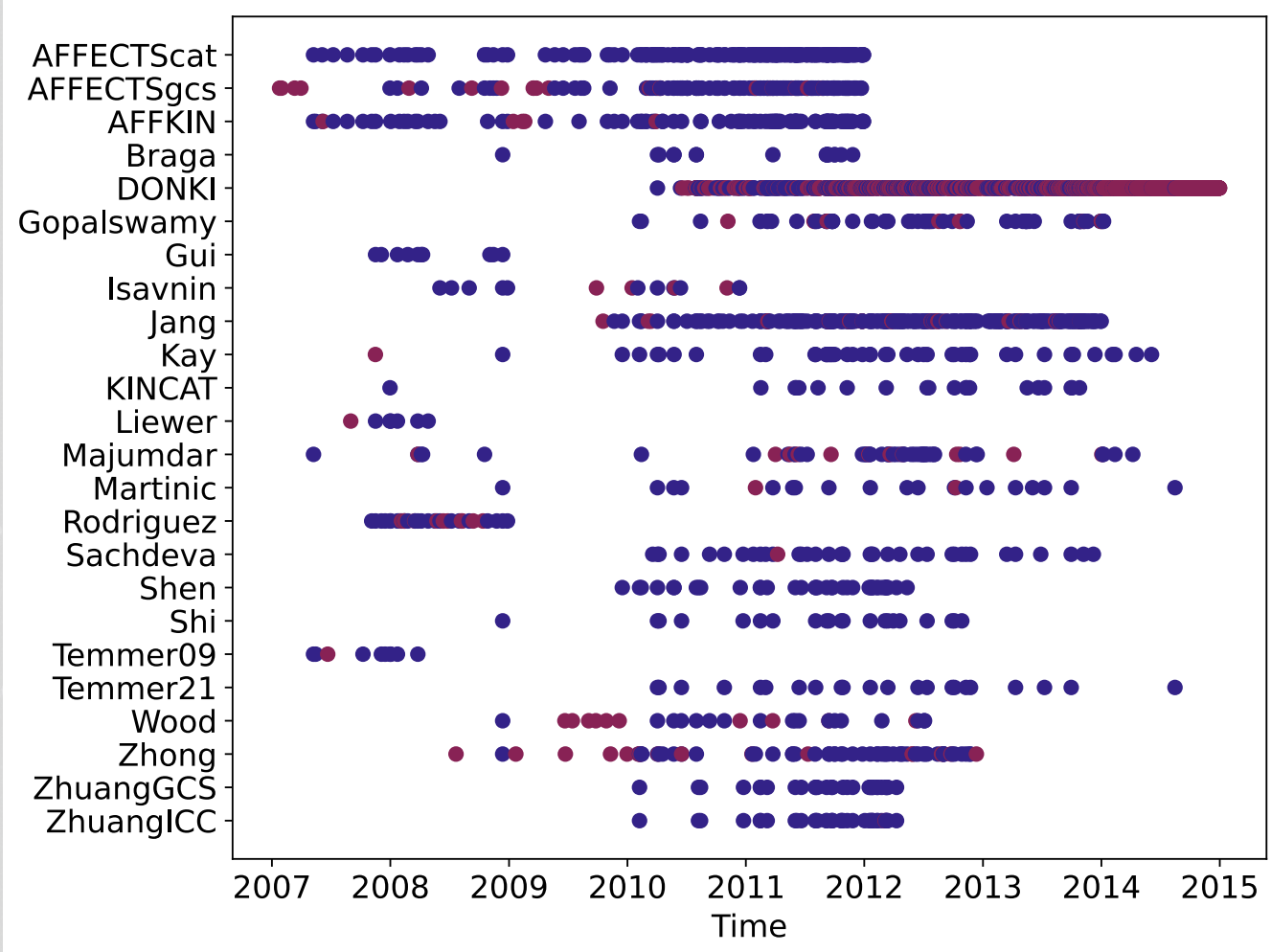
Submit

Clear Form

You can look up the Registration Run Number for your simulation of interest in the online [CCMC runs database](#).

► **A QUICK (RELEVANT?) DETOUR BEFORE
THE SUMMARY**

- ▶ LIVING LIST OF ATTRIBUTES MEASURED IN ANY CORONAL RECONSTRUCTIONS
 - ▶ ANY 3D CME MEASUREMENTS (REQUIRE LAT/LON) IN 2007-2014
 - ▶ 2984 RECONSTRUCTIONS FOR 1863 CMEs
- ▶ LLAMAICE (IN SITU CME EVENTS) IN PROGRESS

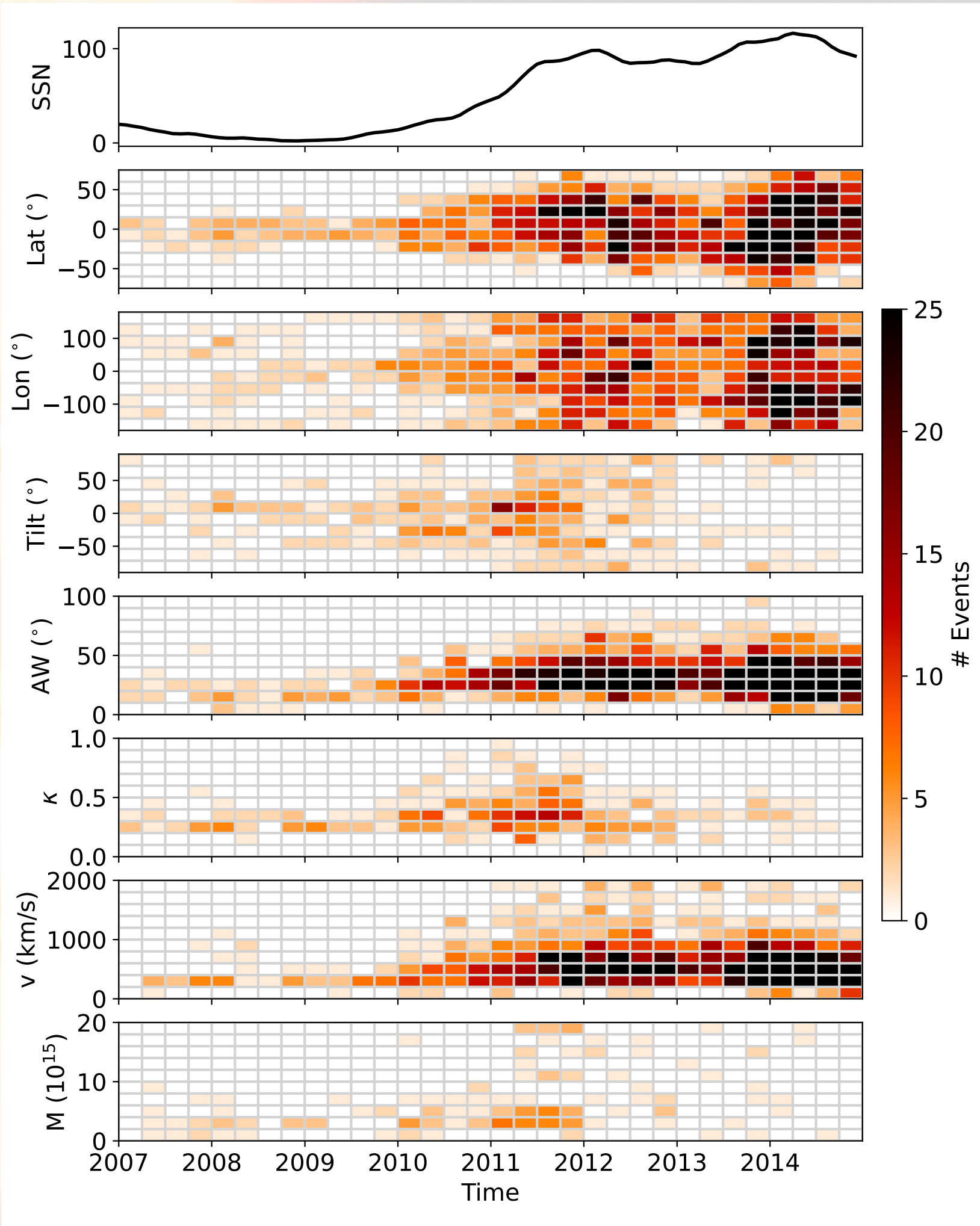


LLAMACoRe - Expected Uncertainty in Rec

Lat	4.0 deg	---
Lon	8.0 deg	---
Tilt	24.0 deg	---
AW	9.4 deg	27%
kappa	0.1	29%
vel	115 km/s	19%
M	2.5e15 g	38%

LLAMACoRE - All Results, Best-Constrained Values

LLAMACoRE ID	NRECONS	LAT (DEG)	Lon (DEG)	TILT (DEG)	AW (DEG)	KAPPA	VEL (KM/S)	MASS (1E15 G)
2007-03-31T09:52:30	1	5.0	86.8	7.8	27.1	0.327	None	None
2007-05-09T04:22:30	4	1.3±1.4	-116.4±10.0	-17.3	10.1±10.1	0.378±0.047	276.5± 3.0	9.50
2007-05-15T19:22:30	2	7.5±6.0	-63.6±15.6	52.0	28.2	0.345	398.5±46.5	4.00

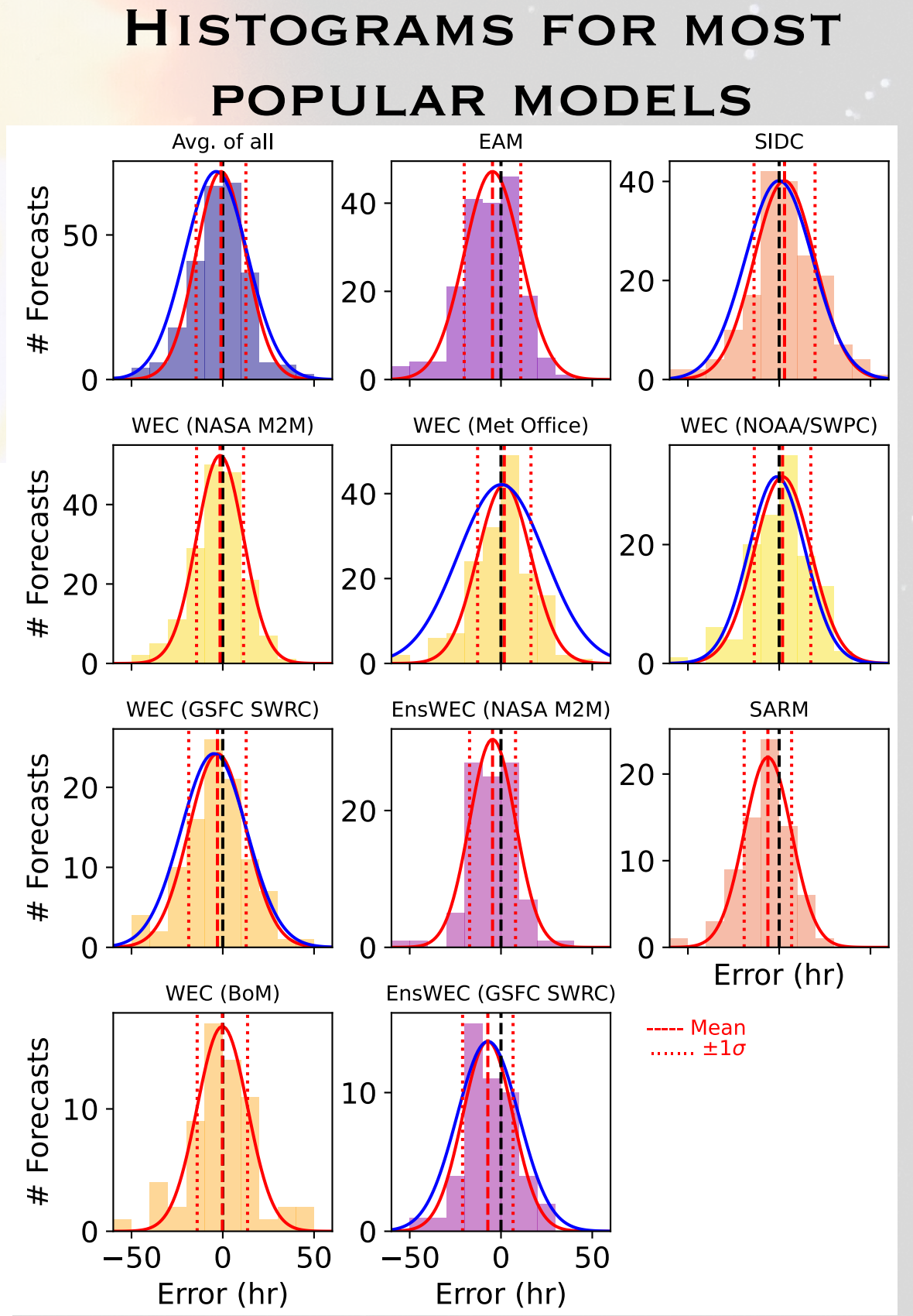
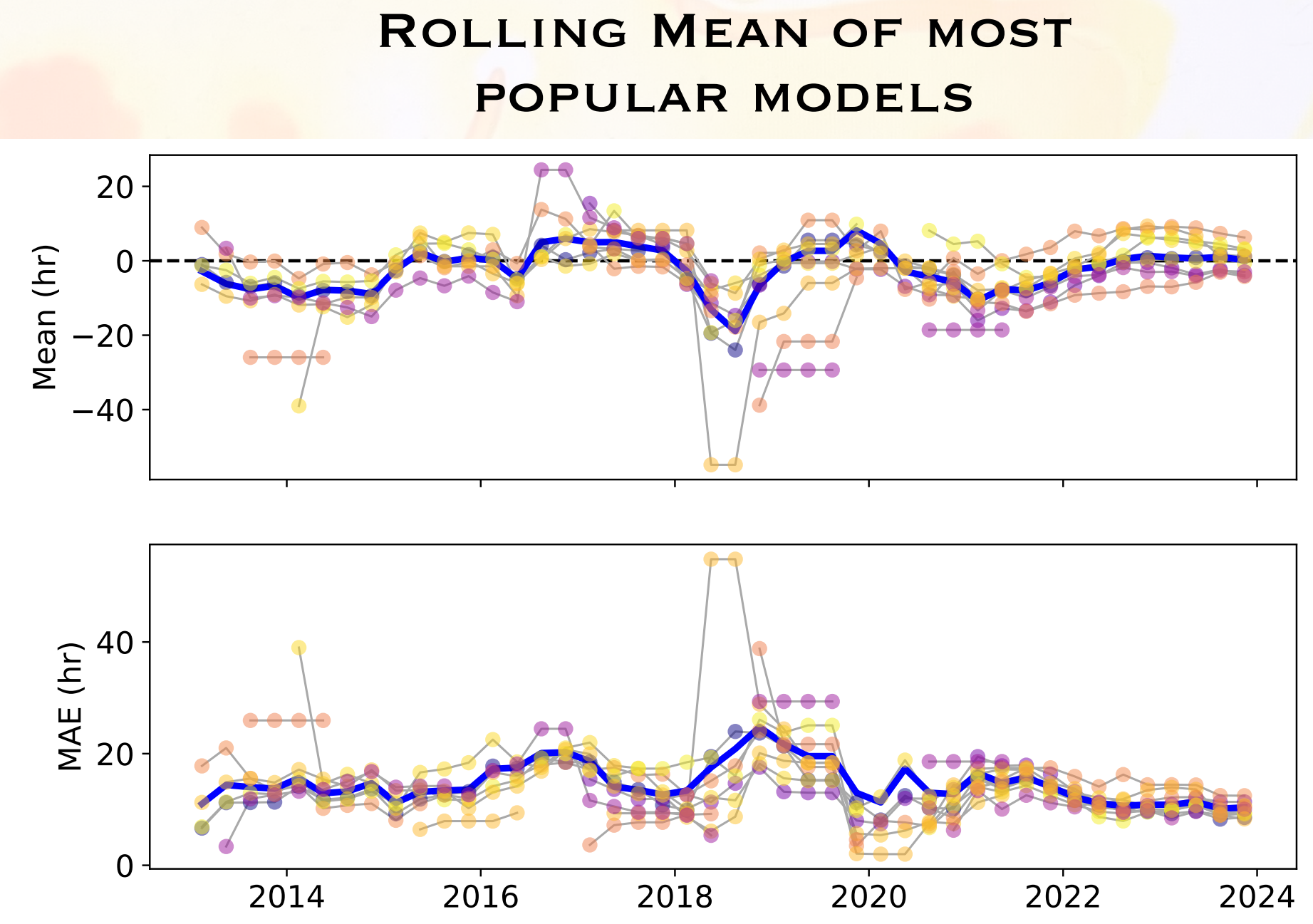
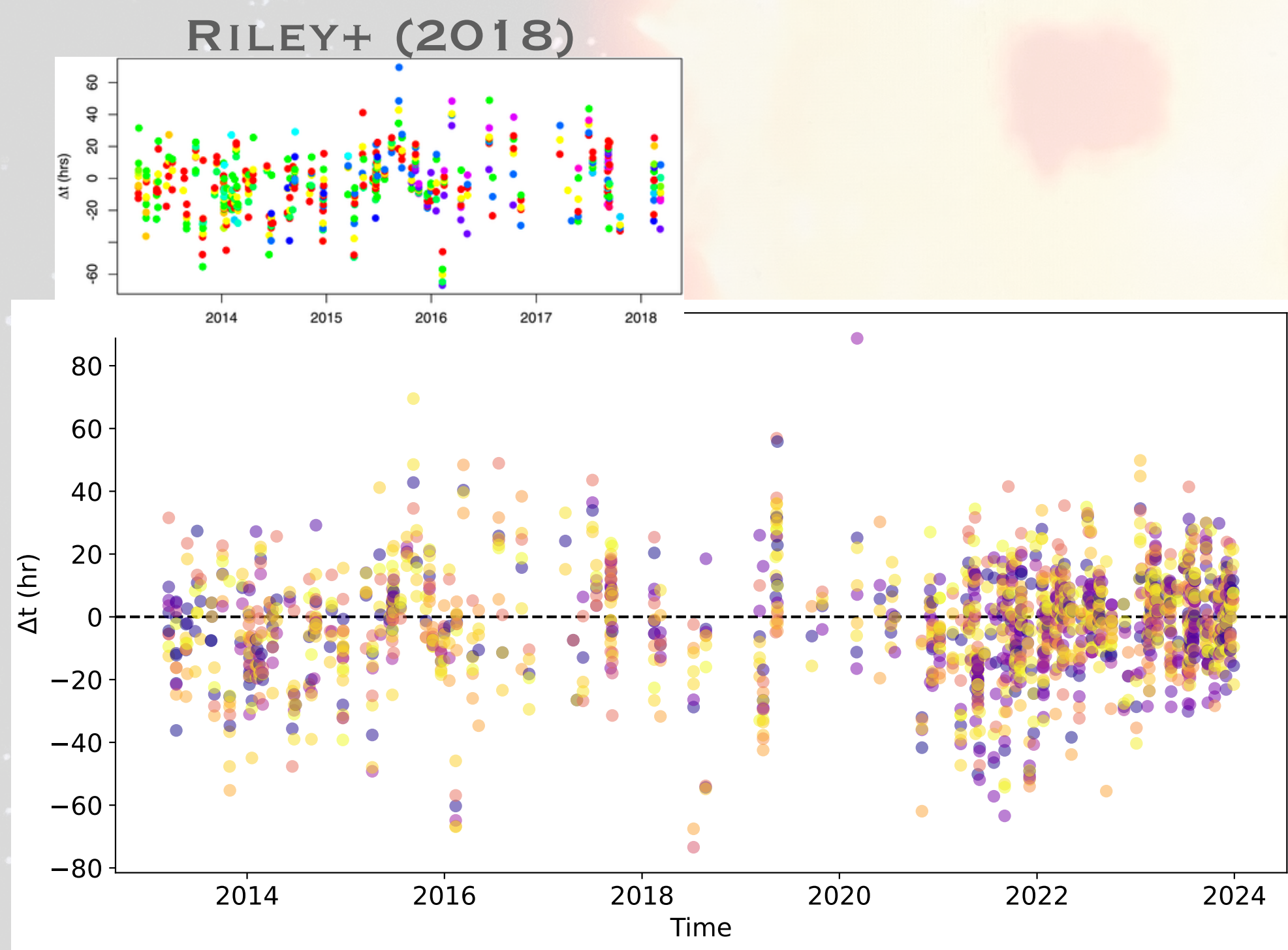


JOIN THE LLAMAVEVERSE!
(LIVING LIST OF
ATTRIBUTES MEASURED
IN ANY VERIFIED
EXTERNAL RESOURCE
STUDYING EJECTA)

ARRIVAL TIME SCOREBOARD PROJECT

KAY+ UNDER REV.

- ▶ UPDATING WORK OF RILEY+ (2018) → ADDITIONAL ~6 YEARS OF PREDICTIONS (3.5X SAMPLE SIZE)
- ▶ OVERALL METRICS LARGELY UNCHANGED
 - ▶ LITTLE TO NO BIAS (-2.5 HR) WITH 13 HR ABSOLUTE ERROR BUT A LOT OF SPREAD ABOUT THESE NUMBERS (STD 17 HR)
- ▶ HINTS OF IMPROVEMENTS IN WELL-ESTABLISHED MODELS



SUMMARY

ASK FOR AN OSPREI STICKER!

- ▶ OSPREI RoR IS NOW AVAILABLE!
- ▶ EASY ACCESS TO FULL SUN TO EARTH (OR STEREO/
PSP/SOLO) ENSEMBLE CME SIMULATIONS



OSPREI.SPACE

BIT.LY/OSPREICCMC

CHRISTINA.D.KAY@NASA.GOV

OSPREIMODEL@GMAIL.COM

SUMMARY

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- ▶ **OSPREI RoR IS NOW AVAILABLE!**
 - ▶ **EASY ACCESS TO FULL SUN TO EARTH (OR STEREO/ PSP/SOLO) ENSEMBLE CME SIMULATIONS**
- ▶ **HELP BREAK OSPREI RoR!**
 - ▶ **EXTENSIVE TESTING DONE LOCALLY AND ON INTERFACE BUT CERTAINLY UNEXPECTED QUIRKS TO WORK OUT**
 - ▶ **USERS LESS FAMILIAR WITH THE DEVELOPMENT WILL HELP MATURE THE MODEL**



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- ▶ **MINOR CHANGES PROBABLY COMING BUT MOSTLY FOR AESTHETICS/STABILITY?**



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- ▶ **MINOR CHANGES PROBABLY COMING BUT MOSTLY FOR AESTHETICS/STABILITY?**
- ▶ **THANK YOU TO THE CCMC TEAM FOR HELP ONBOARDING OSPREI!!!**



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