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BibHelioTech

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► **To cite this version:**

Vincent Génot, Axel Dablanc, Richard Hitier, Camille de Salabert, Sabine Barreaux, et al.. Bib-HelioTech: BibHelioTech: cataloguing and documenting all heliospheric events?. European Space Weather Week, Nov 2023, Toulouse, France. hal-04285006

HAL Id: hal-04285006

<https://hal.science/hal-04285006>

Submitted on 14 Nov 2023

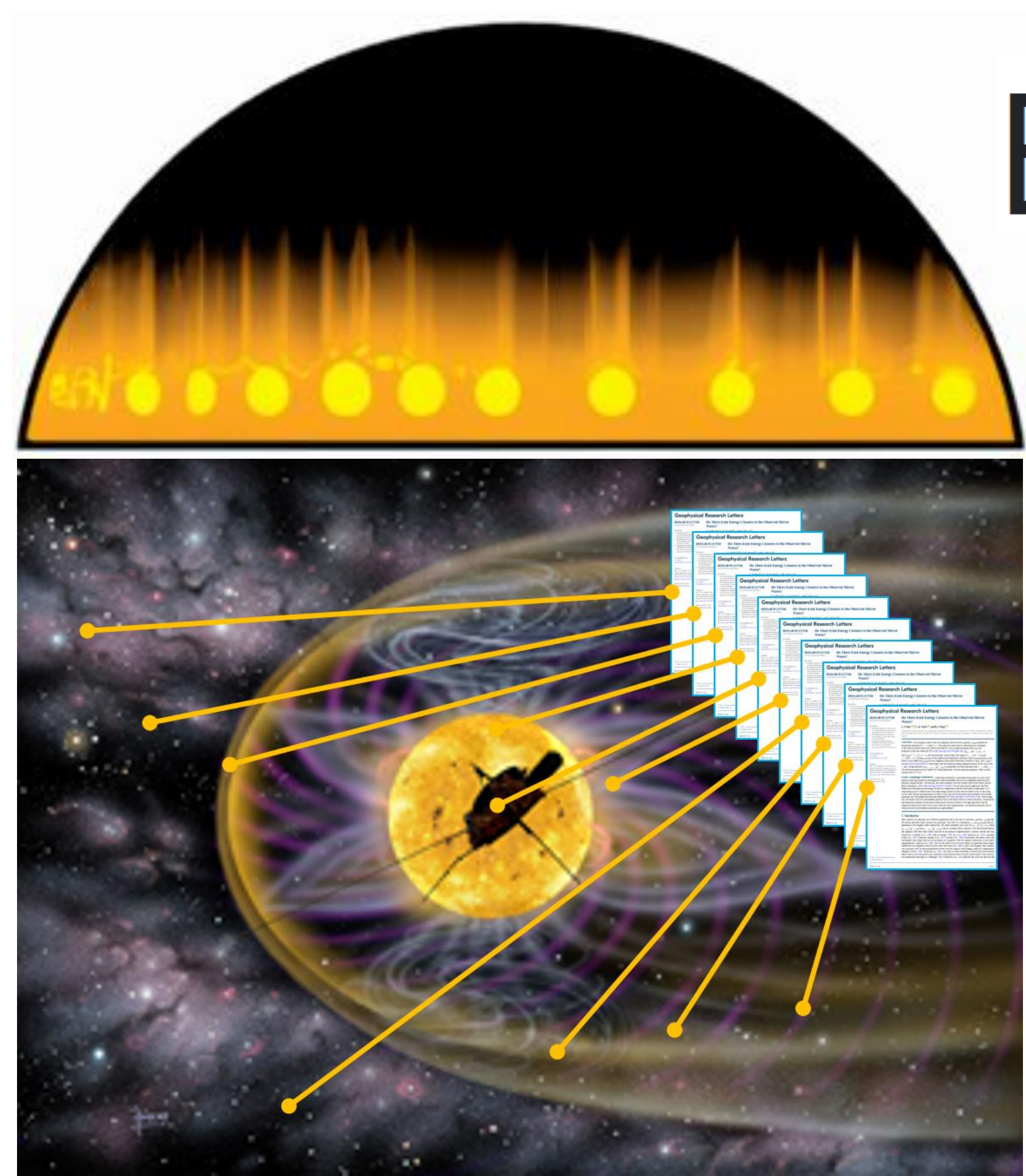
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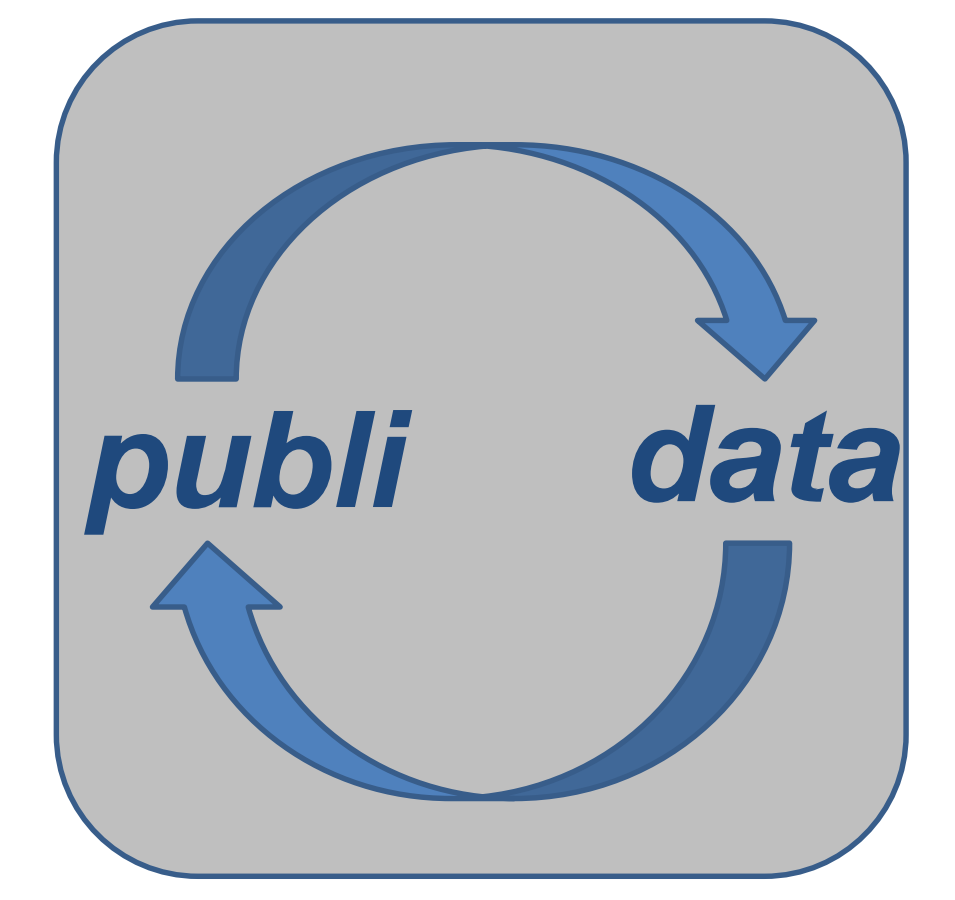
Abstract ID: 689
 Abstract Title: BibHelioTech: cataloguing and documenting all heliospheric events ?
 Session: CD07
 Display time: Poster II, Wednesday 14:00 - Friday 12:00
 Authors in attendance time: Thursday 10:15-11:45, Friday 10:15-11:45



BibHelioTech

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DOI 10.5281/zenodo.7746571

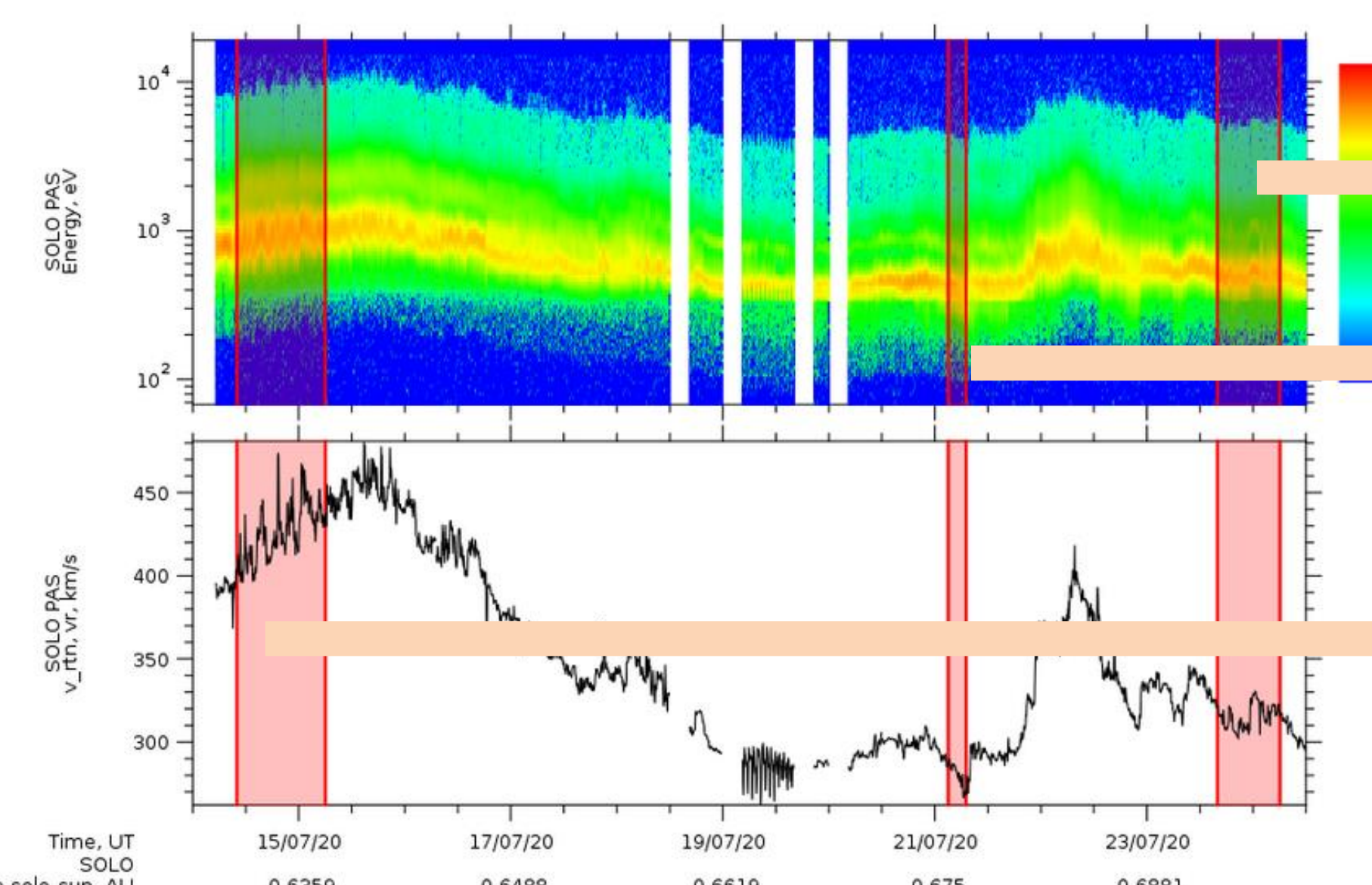


BibHelioTech is on **GitHub**

From a corpus of heliophysics articles using data from space missions, **BibHelioTech** carries out automated textual detections on the observed events, the satellites/instruments used, the spatial regions and the physical processes concerned, in order to link these entities with the publications from which they are extracted, in catalogs usable by the discipline's data analysis tools. This strong and systematized link between data and publications, non-existent to date, 1/ will increase the data analysis experience by immersing the researcher in the bibliographic context of their case study, 2/ will significantly improve the reproducibility of published results, and 3/ will facilitate the reuse of these catalogs in new statistical and comparative studies.

Use case

- Visualization of Solar Orbiter PAS data in **AMDA** in July 2020
- The **3 intervals** in red correspond to those studied in the **3 articles** on the right
- BibHelioTech** will produce catalogs, bridging intervals and articles, and readily integrable in tools like **AMDA** and **Sciqlop**



AAA 656, A12 (2021)
<https://doi.org/10.1051/0004-6361/202148015>
 R. Knolke et al. 2021

Solar Orbiter First Results (Cruise Phase)

Solar Orbiter observations of the Kelvin-Helmholtz waves in the solar wind

R. Knolke¹, B. Lavraud², Y. Yang³, W. H. Matthaeus⁴, D. Raffalli⁵, J. E. Sturrock⁶, S. Aizawa⁷, C. Foullet⁸, V. Gloc⁹, R. F. Pinto¹⁰, N. Faganel¹¹, P. Louarn¹², A. Rouillard¹³, A. Fokov¹⁴, E. Pennu¹⁵, C. J. Owen¹⁶, T. S. Horbury¹⁷, H. O'Brien¹⁸, V. Evans¹⁹, and V. Angelini²⁰

Astronomy & Astrophysics
 Special Issue

AAA 656, A14 (2021)
<https://doi.org/10.1051/0004-6361/202148016>
 P. Louarn et al. 2021

Solar Orbiter First Results (Cruise Phase)

Multiscale views of an Alfvénic slow solar wind: 3D velocity distribution functions observed by the Proton-Alpha Sensor of Solar Orbiter

P. Louarn¹, A. Fokov², L. Prech³, C. J. Owen⁴, R. Bruno⁵, S. Liu⁶, B. Lavraud⁷, A. P. Rouillard⁸, V. Gloc⁹, N. Andujar¹⁰, G. Frit¹¹, V. Genc¹², R. Knolke¹³, J. Fontana¹⁴, E. Pennu¹⁵, A. Barthel¹⁶, D. Knaack¹⁷, M. Bartholom w¹⁸, R. D'Amico¹⁹, L. Senechal²⁰, F. Albertini²¹, F. Raso²², D. Verschuur²³, V. Formisano²⁴, G. Mikić²⁵, Y. S. Hothbery²⁶, H. O'Brien²⁷, V. Evans²⁸, V. Angelini²⁹, M. Maksimovic³⁰, J. C. Kasper³¹, and S. D. Bale³²

Astronomy & Astrophysics
 Special Issue

AAA 656, A14 (2021)
<https://doi.org/10.1051/0004-6361/202148016>
 P. Louarn et al. 2021

Solar Orbiter First Results (Cruise Phase)

Simulations of radio-wave anisotropic scattering to interpret type III radio burst data from Solar Orbiter, Parker Solar Probe, STEREO, and Wind

S. Mousset¹, M. Maksimovic², E. Kontar³, V. Krupar⁴, N. Chryssos⁵, X. Bonin⁶, A. Vecchia⁷, B. Cecconi⁸, A. Zarnecki⁹, K. Isomoto¹⁰, S. D. Bale¹¹, and M. Paltas¹²

Astronomy & Astrophysics
 Special Issue



Prototype pipeline and admin website

European Space Weather Week
 20-24 November, 2023
 Toulouse, France

Upload / exe / database interface

#	Title	del	pdf	cat	run	status
1	ark_67375_80W-JTG4NOJL-N	del	pdf	cat	run	finished 00:42:25
2	A51606C002834C8C0D0FE52E896579C2E80384	del	pdf	cat	run	finished 00:3:38
3	ark_67375_80W-FXS4V24C-8	del	pdf	cat	run	
4	ark_67375_80W-RTQRJCK-8	del	pdf	cat	run	
5	ark_67375_80W-NGMLHKT9-3	del	pdf	cat	run	finished 00:2:54

Example catalogue in HPEvent format

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# Parameter 2: id:column2; name:SATS; size:1; type:char;
# Parameter 3: id:column3; name:INST; size:1; type:char;
# Parameter 4: id:column4; name:REGS; size:1; type:char;
# Parameter 5: id:column5; name:D; size:1; type:int;
# Parameter 6: id:column6; name:R; size:1; type:int;
# Parameter 7: id:column7; name:SO; size:1; type:int;
# Parameter 8: id:column8; name:occur; size:1; type:int;
# Parameter 9: id:column9; name:nb_durations; size:1; type:int;
# Parameter 10: id:column10; name:conf; size:1; type:float;
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2015-09-20T06:10:00.000 2015-09-20T06:10:59.999 https://doi.org/10.1051/0004-6361/202148016 "MMS" "" "Heliosphere.NearEarth" 580 1 2 131 108 0.045774269928661
2015-09-20T06:20:00.000 2015-09-20T06:20:59.999 https://doi.org/10.1051/0004-6361/202148016 "MMS" "DIS,HPCA,FGM,EDP,DES,FFI" "Earth.Magnetosphere" 624 1 56 131 108 0.0017589356184462737
2015-09-20T06:30:00.000 2015-09-20T06:30:59.999 https://doi.org/10.1051/0004-6361/202148016 "MMS" "DIS,HPCA,FGM,EDP,DES,FFI" "Earth.Magnetosphere" 2405 1 53 131 108 0.00742961087697875
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- API for direct access

Example search for 'magnetopause' in ISTEX

Request: [https://api.istex.fr/document/?q=magnetopause&facet=corpusName\[*\]&size=10&sort=publ|cat|ondate|desc|datepub\[*\]&stats](https://api.istex.fr/document/?q=magnetopause&facet=corpusName[*]&size=10&sort=publ|cat|ondate|desc|datepub[*]&stats)

Response brute complete

Corpus: 14399 (144)

Effect of the solar wind density on the evolution of normal and inverse cor...

- What is inside ?**
- OCR for efficient (but costly) PDF2TXT transformation
 - GROBID for DOI recognition
 - SUTime library for time pattern recognition
 - SPASE dictionary for spatial regions
 - Lists of missions + instruments
 - Interval – mission association is done with a proximity criterion

- What are the performances ?**
- Several minutes / article (too much !)
 - Good recognition of time patterns
 - Fair interval – mission association
 - Confidence index helps sorting intervals

- What are the plans ?**
- Get rid of OCR, GROBID and use ISTEX metadata and file formats
 - Massive analysis with ISTEX API
 - AI to get article / observations summary
 - Integration in AMDA / Sciqlop

Available Missions:

ACE 110 AIM 1 AMPTE 2 BepiColombo 20 CCE 1 Cassini 101 Cluster 68 Cluster-1 11 Cluster-3 3 DMSP 4 Dawn 8 GOES 55 GONG 8 Galileo 2 Geotail 86 Helios 11 Hinode 8 IMAGE 85 IMP 2 IMP-6 2 IMP-8 1 ISEE 6 ISEE-1 1 Interball 1 Interball-Tail 1 LAquila 1 MESSENGER 62 MEX 1 MMS 118 MMS1 1 MMS4 53 Mariner-10 17 MarsScienceLaboratory 1 NOAA 1 NSO 1 OMNI 3 PSP 104 PVO 3 Pioneer 6 Pioneer-11 1 RHESSI 4 SOHO 9 SPGS 1 STEREO 6 STEREO-A 33 SolarOrbiter 210 THEMIS-E 26 Thule 5 Ulysses 16 VEX 3 Vega 1 Voyager 106 Voyager-2 31 Wind 94 Yohkoh 1

210 events for SolarOrbiter [Download](#)

start	stop	doi	instrument(s)	region
2020-02-10T00:04:00.000	2020-02-10T00:04:59.999	https://doi.org/10.1051/0004-6361/202140855	RPWMAG,SWA,PAS	Heliosphere.Inner
2020-02-10T00:04:00.000	2020-02-10T00:04:59.999	https://doi.org/10.1051/0004-6361/202140855	RPWMAG,SWA,PAS	Heliosphere.Inner
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2020-02-10T00:04:00.000	2020-02-10T00:04:59.999	https://doi.org/10.1051/0004-6361/202140855	RPWMAG,SWA,PAS	Heliosphere.Inner

