



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

ESCAPE to the Future
25-26 October 2022
Brussels, Belgium

ESCAPE to the Future: OSSR – Open Software in the EOSC

Kay GRAF

for the OSSR Team

ESCAPE to the Future, Brussels, 25-26th of Oct. 2022



ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 824064.



ESCAPE EOSC cell

ESCAPE OSSR
 Catalogue & Repository of resources

- Datasets
- Software & services
- Tutorials
- Training
- Publications

ESCAPE VO Virtual Observatory

- Astronomy Data centres
- VO Registry
- VO Registry
- Analysis Tools
- VO Services

TSP's

RI-Specific Science Platforms

ESCAPE SAP Science Platforms

Workflows, notebooks, deployment platforms, packaging

ESCAPE CS Citizen Science

ESCAPE DIOS Data Lake

FAIR data management
 Content discovery and delivery

HPC

PRACE

EuroHPC Joint Undertaking

HTC

Grid clusters, etc

Private/public clouds

Commercial clouds

GÉANT



Status before ESCAPE and OSSR Vision

- Software second to data in the EOSC scheme
- Diverse status of (open) scientific software within the community
- Cross-experiment analysis via MoUs with minimal exchange of data and software
- Modern approaches individually handled, no extensive cross-fertilisation
- No standard for metadata and archival, no link (of community software) to EOSC
- ...

The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a reliable, sustainable open-access repository to share scientific software and services to the science community and enable open science. It houses astro-particle-physics-related scientific software and services for data processing and analysis, as well as test data sets, user-support documentation, tutorials, presentations and training activities.



OSSR Aims and Objectives

● Objectives:

- Facilitate and support continuous **development, deployment, exposure and preservation** of partners' software/tools/services
- Foster **interoperability, software re-use and cross-fertilisation** between ESFRIs (e.g. simulation)
- Offer an **open innovation environment for open standards** (e.g. workflows, data-formats), **common regulations** and **shared (novel) software** for multi-messenger & multi-probe data
- Establish the link of the **community to the EOSC** and vice-versa.
- **Training** of experienced code custodians to create and maintain high-quality, open software and **raise their visibility**

● All objectives follow:

- Paradigm of **enabling open science** – with **software as “first class citizen”**
- a **community-based and inclusive** approach
- the **FAIR principles** for open science resources – software and derivatives
- **Federation** of available resources

●●●● ESCAPE
●●●● OSSR

Catalogue &
Repository of
resources

Datasets
Software & services
Tutorials
Training
Publications



OSSR – User's View

<http://purl.org/escape/ossr>

ESCAPE OSSR ▾ OSSR POLICY ▾ TUTORIALS ▾ TOOLS ▾ ABOUT ▾



Search software and services in the ESCAPE repository

Welcome to the ESCAPE OSSR!

[Browse the OSSR content.](#)

What is it?

The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a sustainable open-access repository to share scientific software and services to the science community and enable open science. It will house astro-particle-physics-related scientific software and services for data processing and analysis, as well as test data sets, user-support documentation, tutorials, presentations and training activities.

How to contribute to the ESCAPE OSSR?

You can onboard your project right now - [see here](#) how.

Learn more about our projects in this website or [Contact us!](#)

Entry

Federation

Long-term

EOSC Integration

Training

Research infrastructures and Science Projects in the OSSR

cherenkov telescope array	Legacy Survey of Space and Time	
		european solar telescope
	Joint Institute for VLBI ERIC	
HL-LHC PROJECT		

Please note that this page will be constantly updated with the latest WP3 development.

zenodo ESCAPE 2020

Found 15 results.

- August 19, 2021 (1/1) Report Open Access
EOSC Symposium 2021 Report
Bertacchini, Veronica, Diago, Federico, Ficker, Katharina, Gebreyesus, Netsanet, Grant, Annabel, Jones, Bob, Linamaa, Iiri, Makišalić, Anja, Marrocco-Kouris, Christine, Meermann, Bert, Saurogger, Bernd, Smith, Zachary
The EOSC Symposium 2021 provided a key engagement opportunity for the EOSC community after the European Open Science Cloud finally entered its highly anticipated implementation phase in 2021. Delivered online to just under 1,000 EOSC stakeholders from over 63 different countries, this was not only...
- August 2, 2021 (1/1) Software Open Access
agnpy: Modelling Active Galactic Nuclei radiative processes with python.
Cosmo Nigro, Julian Starek, Paweł Głowiak, David Sanchez, Matthew Craig
agnpy is a python package focusing on the computation of the radiative processes of relativistic particles accelerated in the jets of Active Galactic Nuclei (AGN). It includes classes describing the galaxy components responsible for line and thermal emission and calculates the absorption due to gammas.
- July 19, 2021 (1/1) Lesson Open Access
ESCAPE Data Science Summer School 2021
Thomas Vuillaume, Maximilian Nöthe, Julien Peloton, Axel Donath, Amuro Sanchez Pineira, Eduardo Rodriguez, Enrique Garcia, Karl Kosack, Tamas Gal, Benson Muris, Alberto Iasi, Martin Spillmann, Claudia Bielecki, Julia Schrabal, Rachael Answorth
Release of the ESCAPE Data Science Summer School 2021. The school is held as a continuation of the AstriCS/OBELIX summer schools that were organised in-person in Armeiy, France in 2017, 2018 and 2019. The aim of the school is to provide theoretical and hands-on training on Data Science and Python.



ESCAPE School 2021

- WELCOME
- Welcome to the ESCAPE Summer school
- Keynote Reproducible Science
- Seminar - AI in Cosmological Experiments
- Python and Notebooks
- Environment Setup
- Matplotlib
- NumPy
- Version Control using Git & CI

ESCAPE Software Schools

+ related projects / collections



APPE to the



OSSR – Provider Workflow

FAIR
Open-source



- develop/maintain software
- tag a version(release)
- add metadata
- let the CI do the rest

- publishes source code (updates your existing record with new versions)



Long-term

- long term archived
- findable
- citable

Integration



- integrates into ESCAPE EOSC cell

- builds a container image

Reprocessing



- publishes image

- registers image



implemented in [eOSSR library](#)

eOSSR
DOI 10.5281/zenodo.5524912



OSSR Onboarded Entries

Direct

zenodo escape2020 Upload Communities Log In

All versions Found 34 results. Sort by: Best match asc.

Access Right: Open (34)

File Type: Zip (18), Pdf (12), Json (4), Gz (3), Simg (2), Tar (2)

Keywords: ESCAPE (7), Jupyter-Notebook (4), Astronomy (2), CTA (2), Analysis (2), ATLAS (1), Astronomy And Astrophysics (1), Astroparticle Physics (1), Compact Groups (1), Data Analysis (1)

Type: Software (21)

August 10, 2022 (v1.0) Software Open Access View

escape2020/school2022: v1.0

Thomas Vuillaume; Enrique Garcia; Maximilian Linhoff; Karl Kosack; Jouvina; Martino Sorbaro; Tamas Gal; Mikaël Jacquemont; Dr. Rachael Ainsworth;

Lectures material of the ESCAPE Data Science Summer School 2022. The aim of the school is to provide theoretical and hands-on training on Data Science and Python development for astrophysics, astroparticle physics and particle physics. Find all the school information on the interactive portal: [http](http://)

Uploaded on August 10, 2022

July 13, 2022 (v0.6.1) Software Open Access View

eOSSR

Vuillaume, Thomas; Garcia, Enrique; Tacke, Christian; Gál, Tamás;

The ESCAPE OSSR library The eOSSR Python library gathers all the developments made for the OSSR. In particular, it includes:- an API to programmatically CodeMeta schema

Uploaded on July 13, 2022

8 more version(s) exist

Aggregated



- R Register
- V Validator
- N Notifications

YOUR LOGO HERE

Open-source Scientific Software and Service Repository

DASHBOARD UPDATE AGGREGATION HISTORY ENRICHMENTS USAGE COUNTS

Records collected on 2022-09-05: **85**

Enrichments: **464**

Downloads: --



Cross-fertilisation and ESFRI Software Developments



Mohammad Al-Turany
FAIR
OSSR & GSI/FAIR



Matthias Füßling
CTA
Cheromkov Telescope Array Observatory (CTAO)

Des Small
JIV-ERIC
CASA improvements for VLBI





● Technical Developments:

- Extending metadata scheme
- Extending eOSSR library with advance search, additional development platforms and archives
- Support for integration with analysis platform and virtual research environment in EOSC-Future

● Sustaining OSSR:

- Repository infrastructure is sustainable by choice/design
- Interest group from members of onboarding group formed
- Continue the cross-fertilisation and co-operation in software development
- Maintenance is goal of the ESCAPE collaboration

● Enlarging the scope

- Engagement with HORIZON-INFRA-2023-EOSC-01-02 “Development of community-based approaches for ensuring and improving the quality of scientific software and code”
- Strive to become part of the EOSC Exchange layer

● Collection and preservation of all software and services generated in ESCAPE



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Thanks for your attention!