Deriving a novel mass-loss rate relation for AGB star with minimal bias against binarity Application DMP

Questionnaire

The questions in this section should only be answered if you are currently applying for FWO funding.
Are you preparing an application for funding?

- No

Deriving a novel mass-loss rate relation for AGB star with minimal bias against binarity
DPIA

DPIA

Have you performed a DPIA for the personal data processing activities for this project?

- Not applicable

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GDPR

GDPR

Have you registered personal data processing activities for this project?

- Not applicable

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FWO DMP (Flemish Standard DMP)

1. Research Data Summary

List and describe all datasets or research materials that you plan to generate/collect or reuse during your research project. For each dataset or data type (observational, experimental etc.), provide a short name & description (sufficient for yourself to know what data it is about), indicate whether the data are newly generated/collected or reused, digital or physical, also indicate the type of the data (the kind of content), its technical format (file extension), and an estimate of the upper limit of the volume of the data.

				Only for digital data	Only for digital data	Only for digital data	Only for physical data
Dataset Name	Description	New or reused	Digital or Physical	Digital Data Type	Digital Data format	Digital data volume (MB/GB/TB)	Physical volume
		Please choose from the following options: • Generate new data • Reuse existing data	*Please choose from the following options:* • Digital • Physical	*Please choose from the following options:* • Observational • Experimental • Compiled/aggregated data • Simulation data • Software • Other • NA	*Please choose from the following options:* • .por, .xml, .tab, .csv,.pdf, .txt, .rtf, .dwg, .gml, … • NA	*Please choose from the following options:* • <100MB • <1GB • <100GB • <1TB • <5TB • <10TB • <50TB • >50TB • NA	
D1	grid of SPH simulations	New	Digital	Simulation data	.hdf5, code/jupyter notebooks	< 5TB	
D2	channel maps and spectral lines	New	Digital	Simulation data	.hdf5, .fits, .txt, .npy, python code/jupyter notebooks	< 5TB	
D3	grid of AMR simulations	New	Digital	Simulation data	.dat. hdf5	< 5TB	

If you reuse existing data, please specify the source, preferably by using a persistent identifier (e.g. DOI, Handle, URL etc.) per dataset or data type:

NA

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? Describe these issues in the comment section. Please refer to specific datasets or data types when appropriate.

- No

Will you process personal data? If so, briefly describe the kind of personal data you will use in the comment section. Please refer to specific datasets or data types when appropriate.

- No

Does your work have potential for commercial valorization (e.g. tech transfer, for example spin-offs, commercial exploitation, …)? If so, please comment per dataset or data type where appropriate.

- No

Do existing 3rd party agreements restrict exploitation or dissemination of the data you (re)use (e.g. Material/Data transfer agreements/ research collaboration agreements)? If so, please explain in the comment section to what data they relate and what restrictions are in place.

- No

Are there any other legal issues, such as intellectual property rights and ownership, to be managed related to the data you (re)use? If so, please explain in the comment section to what data they relate and which restrictions will be asserted.

- No

2. Documentation and Metadata

Clearly describe what approach will be followed to capture the accompanying information necessary to keep data understandable and usable, for yourself and others, now and in the future (e.g., in terms of documentation levels and types required, procedures used, Electronic Lab Notebooks, README.txt files, Codebook.tsv etc. where this information is recorded).

- Detailed description of the full scientific process (theoretical derivations, model development and setup, scientific deliverables) will be documented in text files, PDFs and digital notebooks in the working directories of the host institute and published in regular scientific publications.
- Software code/tools and Jupiter notebooks/scripts will include readme files on Github and will be commentated inline in the code to describe the aim of the code and details on the input/out variables. All modelling output will be saved in a well-documented local directory structure with readme.txt files.

Will a metadata standard be used to make it easier to find and reuse the data? If so, please specify (where appropriate per dataset or data type) which metadata standard will be used. If not, please specify (where appropriate per dataset or data type) which metadata will be created to make the data easier to find and reuse.

- Yes

- Data bases of model output will come with model specific metadata information on parameter space setup.
- Journal publications will use dedicated journal standards (e.g. keywords) to identify research context

3. Data storage & back-up during the research project

Where will the data be stored?

The data is stored on the server provided by the Institute of Astronomy.

How will the data be backed up?

The stored data is regularly backed up on the Institute of Astronomy servers, according to the KU Leuven security standards.

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely.
If no or insufficient storage or backup capacities are available, then explain how this will be taken care of.

- Yes

Necessary additional storage facilities are calculated in the project budget. If even more storage is needed, these can be taken on by the research group working budget.

How will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Raw and processed data are stored on institute network servers and backup following KU Leuven and in-house security standards: all data are secured with access restrictions on file-system level.

What are the expected costs for data storage and backup during the research project? How will these costs be covered?

The costs are covered by the research group working budget.

4. Data preservation after the end of the research project

Which data will be retained for at least five years (or longer, in agreement with other retention policies that are applicable) after the end of the project? In case some data cannot be preserved, clearly state the reasons for this (e.g. legal or contractual restrictions, storage/budget issues, institutional policies...).

All data will be retained for five years.

Where will these data be archived (stored and curated for the long-term)?

All data will be stored on the servers of the host institute.
All publications will be archived on the website of the scientific journal and the SAO/NASA Astrophysics Data System.

What are the expected costs for data preservation during the expected retention period? How will these costs be covered?

The costs are covered by the research group working budget.

5. Data sharing and reuse

Will the data (or part of the data) be made available for reuse after/during the project? In the comment section please explain per dataset or data type which data will be made available.

- Yes, in an Open Access repository
- Scientific publications with description of the full scientific process, methods and model output parameters will be made available via journal websites and KU Leuven Lirias.
- Software tools and scripts will be made available via Github

If access is restricted, please specify who will be able to access the data and under what conditions.

NA

Are there any factors that restrict or prevent the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)? Please explain in the comment section per dataset or data type where appropriate.

- No

Where will the data be made available? If already known, please provide a repository per dataset or data type.

- Scientific publications with description of the full scientific process, methods and model output parameters will be made available via journal websites and KU Leuven Lirias.
- If necessary (i.e. if not all relevant data can be disseminated via scientific publications due to size/type constraints) deliverables will be made public via a dedicated project website on the host website (but linked in the scientific publication).
- Software tools and scripts will be made available via Github

When will the data be made available?

The relevant data will be made available on publication of an accompanying paper.

Which data usage licenses are you going to provide? If none, please explain why.

Results and data in scientific journals are published under CC-BY 4.0.
Software on Github are published underGPL-3.0 license.

Do you intend to add a PID/DOI/accession number to your dataset(s)? If already available, you have the option to provide it in the comment section.

- Yes

Scientific publications will get a DOI assigned as per journal standards.

What are the expected costs for data sharing? How will these costs be covered?

Any publication cost will be covered by the bench fee.
There are no costs associated with GitHub or other public access repositories such as ArXiv or Lirias.

6. Responsibilities

Who will manage data documentation and metadata during the research project?

The PI and team members together with assistance from the institute's project coordinator and IT team.

Who will manage data storage and backup during the research project?

The PI and institute's IT team will be responsible for proper working of server storage and backup.

Who will manage data preservation and sharing?

The PI and team members will make sure the data is correctly set up for server storage and open access sharing.

Who will update and implement this DMP?

The PI and institute's project coordinator.