

SI 1 Authorship guidelines and template

SI 1.1 INAR Authorship form

This form is part of the INAR authorship guidelines and is recommended for manuscripts where all or some of the *main author(s)* are from INAR.

Timeline and instructions:

- A *main author* initiates a new form by duplicating the authorship form and guidelines document — preferably as an online document. If using an offline document, all *potential co-authors* should be able to access the most updated version on requesting the *main author(s)*.
- The form should be made available to *potential co-authors* before or when the discussion of the manuscript goes beyond the *main author(s)*. Any new *potential co-authors* should be added as their role becomes clear.
- *Potential co-authors* fill basic information upon receiving the *authorship form* and the rest of the entries in their table (checklist) in a timely way such that the *main authors* have all the information before submission of the manuscript to a journal. Co-authors will be confirmed when the checklist is completed and reviewed by the *main author(s)*.
- In case of any queries or concerns, including addition of any name(s) not yet included, contact **all main authors** right away.

For details, see the guidelines below (SI 1.2).

Overview table (Only for <i>main authors</i>)	
Manuscript (working) title/topic:	
Outline (2–3 bullet points):	
<i>Main author(s)</i> (all):	
First author(s) in order:	
Corresponding author(s):	
Last author:	
Co-authors with higher contribution, not in randomized order (in order):	
Randomization method for the order of equally contributing co-authors (E.g., Last-name alphabetical, coin-toss, a chess tournament, etc.):	
Leadership acknowledgement:	
Other people to acknowledge:	
Funding, projects, and infrastructure to acknowledge:	

Potential co-author table (A copy of this table needs to be created for each <i>potential/main co-authors</i>)																	
Main authors create a table for each <i>potential co-author</i> and fill the first five entries below																	
Name:																	
Date of invitation as potential co-author: (Not for <i>main authors</i>)	dd.mm.yyyy																
Date of removal from potential co-author:	dd.mm.yyyy																
Past and planned responsibilities:																	
Date(s) received manuscript draft(s):	dd.mm.yyyy																
Potential co-author whose name is listed above fills the following entries																	
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>																	
I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	dd.mm.yyyy																
Full name for author list:																	
Email:																	
Affiliation(s):																	
ORCID:																	
Funding source(s) to be acknowledged (along with relevant details):																	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>																	
I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No																
(No need to fill rest of the entries if “Yes”)																	
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	<table border="1"> <tr> <td>Conceptualization Ideas (formulation or evolution of overarching research goals and aims)</td> <td></td> </tr> <tr> <td>Data curation (Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.)</td> <td></td> </tr> <tr> <td>Formal analysis (Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.)</td> <td></td> </tr> <tr> <td>Funding acquisition (Acquisition of the financial support for the project leading to this publication)</td> <td></td> </tr> <tr> <td>Investigation (Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection)</td> <td></td> </tr> <tr> <td>Methodology (Development or design of methodology; creation of models)</td> <td></td> </tr> <tr> <td>Project administration (Management and coordination responsibility for the research activity planning and execution)</td> <td></td> </tr> <tr> <td>Resources (Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools)</td> <td></td> </tr> </table>	Conceptualization Ideas (formulation or evolution of overarching research goals and aims)		Data curation (Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.)		Formal analysis (Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.)		Funding acquisition (Acquisition of the financial support for the project leading to this publication)		Investigation (Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection)		Methodology (Development or design of methodology; creation of models)		Project administration (Management and coordination responsibility for the research activity planning and execution)		Resources (Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools)	
Conceptualization Ideas (formulation or evolution of overarching research goals and aims)																	
Data curation (Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later re-use.)																	
Formal analysis (Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.)																	
Funding acquisition (Acquisition of the financial support for the project leading to this publication)																	
Investigation (Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection)																	
Methodology (Development or design of methodology; creation of models)																	
Project administration (Management and coordination responsibility for the research activity planning and execution)																	
Resources (Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools)																	

	Software (Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components)
	Supervision (Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team)
	Validation (Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs)
	Visualization (Preparation, creation and/or presentation of the published work, specifically visualization/data presentation)
	Writing – original draft (Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation))
	Writing – review & editing (Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages)
	Other:
Conflict(s) of interest (if any):	
I have read the manuscript and agree with the main conclusions:	Yes/No
Date of completion of checklist:	dd.mm.yyyy

SI 1.2 INAR Authorship Guidelines

Main authors: The first author and those who have conceptualized the manuscript and are coordinating the work.

Potential co-authors: All co-authors are tentative till they have confirmed co-authorship, preferably with the authorship form. Keep in mind that the list and order of authors of each manuscript will be re-evaluated at the time of submission.

Authorship form: A form that helps with clear, timely, and transparent communication between *potential co-authors* around common authorship issues.

- 1) *Main author(s)* initiate the *authorship form* and share it with *potential co-authors* before or when the discussion of the manuscript goes beyond the *main author(s)*. The *potential co-authors* need to complete the *authorship form* to become co-authors in the submitted manuscript. *Main author(s)* are the contact point of the manuscript, but if they are all PhD students or early-career post-docs, a senior researcher (e.g., supervisor, group leader) should also be included as an additional contact person. In such cases, the senior researcher is not necessarily a co-author, but should be included in all communications with the *main authors*.
- 2) *Main authors* decide *potential co-authors* by considering the people who made significant and direct contributions to the study or are expected to make such contributions by the time the manuscript is submitted. Co-authorship practices vary in different fields of science, so open discussion on expectations is advised. In most cases, a few authors write the first draft of a manuscript and in the case of several co-authors all don't have a major contribution to writing of the first draft of the manuscript. All *potential co-authors* should be informed about the overall content of the manuscript early on (in the form).
- 3) People who made indirect or minor contributions to the manuscript should be acknowledged. The decision of acknowledging a person instead of adding as a potential co-author is to be carefully discussed among the *main authors*

(and the senior contact person if all main authors are early career). Acknowledgments including funding, infrastructure, assistance with technical issues, discussions, etc., should also be listed in the *authorship form*.

- 4) Each manuscript should follow a transparent and internally consistent criteria for co-authorship vs. acknowledgement. Combat your internal biases to make a fair assessment of actual contributions.
- 5) *Potential co-authorship* does not imply final co-authorship in the submitted manuscript. This “*potential*” nature of the *co-authorship* should be indicated clearly, and the final co-author list should be decided before submission of manuscript to the journal based on the completed *authorship form*.
 - a) *Potential co-author* invitation can be cancelled if decided by *main authors* before *potential co-author(s)* put in significant amount of work and should be communicated clearly. Cases could include branching of manuscript or change of direction, missing contribution, etc.
 - b) *However, main authors* should not cancel *potential co-author* invitation if contribution already made does not end up in the final manuscript. In such cases it should be up to the *potential co-author* to choose to continue as a co-author (still requires completion of *authorship form and associated tasks*) or not.
 - c) Even the first, last, and corresponding authors can change over the course of the manuscript preparation if the *main authors* agree. These changes should be reflected in the *authorship form* as soon as possible.
- 6) In case of random authorship order (except first, perhaps second/last), decide randomizing method (e.g., “last name alphabetical” which has the advantage of clearly indicating that these people have equal contribution) as soon as possible.
- 7) The last invited *potential co-author(s)* should be given at least 2 weeks' time to comment on the manuscript and complete the authorship form. Consider that *potential co-authors* may need more time due to general vacation time across countries and cultures, parental leave, on field campaigns without internet, etc.
- 8) Honorary, gift, and ghost authorships are all considered unethical practices. All *potential co-authors* need to provide proper attribution of contributions in the *authorship form* using the CRediT taxonomy.
 - a) Honorary authorship is the practice of including an author who did not contribute to the work, to provide more credibility to the work by using the individual’s scientific standing.
 - b) Gift authorship is the practice of including an author who did not contribute to the work, as a favour.
 - c) Ghost authorship is when someone heavily involved with the work is not listed as an author or their involvement in the work is not disclosed, usually when a financial conflict of interest is involved.
- 9) *All potential co-authors* are encouraged to comment on the final manuscript. In addition to any other authorship criteria decided by the *main authors, potential co-authors must have read the manuscript and agreed with the main conclusions to be included in the author list of the submitted manuscript*.

Clear and timely communication is the key!

Note: This is version 1.2 of the INAR Authorship Form and Guidelines (last updated: 21st June 2021). The authorship form and guidelines can be freely shared and adapted upon citation of this article.

SI 2 Authorship form example

The following is the completed *authorship form* for this article.

Overview table (Only for <i>main authors</i>)	
Manuscript (working) title/topic:	Clear, transparent, and timely communication for fair authorship decisions: A practical guide
Outline (2–3 bullet points):	<ul style="list-style-type: none"> - Manuscript outlining the INAR Authorship Working Group methodology on developing guidelines and form. - Making the form and guidelines freely available for other groups to adapt/use. - Manuscript for Geoscience Communication.
<i>Main author(s)</i> (all):	Shahzad Gani, Lukas Kohl, Pauli Paasonen, Hanna Vehkamäki
First author(s) in order:	Shahzad Gani
Corresponding author(s):	Shahzad Gani, Pauli Paasonen
Last author:	Hanna Vehkamäki
Co-authors with higher contribution, not in randomized order (in order):	Shahzad Gani, Lukas Kohl,, Pauli Paasonen, Hanna Vehkamäki
Randomization method for the order of equally contributing co-authors (E.g., Last-name alphabetical, coin-toss, a chess tournament, etc.):	Last-name alphabetical
Leadership acknowledgement:	INAR equality and work well-being group and the INAR board.
Other people to acknowledge:	INAR community for feedback through multiple centre-wide surveys and online meetings.
Funding, projects, and infrastructure to acknowledge:	Academy of Finland (ACCC Flagship 337549)

Potential co-author table (A copy of this table needs to be created for each <i>potential/main co-authors</i>)	
Main authors create a table for each <i>potential co-author</i> and fill the first five entries below	
Name:	Shahzad Gani
Date of invitation as potential co-author:	-
<i>(Not for main authors)</i>	
Date of removal from potential co-author:	dd.mm.yyyy
Past and planned responsibilities:	Past: Methodology development Planned: Writing first draft, Coordination, Revisions.
Date(s) received manuscript draft(s):	-
Potential co-author whose name is listed above fills the following entries	
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>	
I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	14.05.2021
Full name for author list:	
Email:	Shahzad.gani@helsinki.fi

Affiliation(s):	1) Institute for Atmospheric and Earth System Research/Physics, University of Helsinki, Helsinki, Finland 2) Helsinki Institute of Sustainability Science, University of Helsinki, Helsinki, Finland	
ORCID:	0000-0002-6966-0520	
Funding source(s) to be acknowledged (along with relevant details):	HELUSUS Societal Impact Funding	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	No	
(No need to fill rest of the entries if “Yes”)		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	Conceptualization Ideas	Y
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	Y
	Project administration	Y
	Resources	
	Software	
	Supervision	
	Validation	
	Visualization	Y
	Writing – original draft	Y
Writing – review & editing	Y	
Other:		
Conflict(s) of interest (if any):	No	
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	22.06.2021	

Potential co-author table	
(A copy of this table needs to be created for each <i>potential/main co-authors</i>)	
Main authors create a table for each <i>potential co-author</i> and fill the first five entries below	
Name:	Pauli Paasonen
Date of invitation as potential co-author:	-
(Not for <i>main authors</i>)	
Date of removal from potential co-author:	dd.mm.yyyy
Past and planned responsibilities:	Past: Methodology development Planned: Writing first draft, Revisions.
Date(s) received manuscript draft(s):	03.06.2021, 21.06.2021
Potential co-author whose name is listed above fills the following entries	

Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):

I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	17.5.2021	
Full name for author list:	Pauli Paasonen	
Email:	pauli.paasonen@helsinki.fi	
Affiliation(s):	INAR / Physics	
ORCID:	0000-0002-4625-9590	
Funding source(s) to be acknowledged (along with relevant details):	Academy of Finland (311932)	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	No	
(No need to fill rest of the entries if “Yes”)		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	Conceptualization Ideas	Y
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	
	Project administration	Y
	Resources	
	Software	
	Supervision	Y
	Validation	
	Visualization	
	Writing – original draft	Y
	Writing – review & editing	Y
Other:		
Conflict(s) of interest (if any):	No	
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	21.6.2021	

Potential co-author table

(A copy of this table needs to be created for each *potential/main co-authors*)

Main authors create a table for each *potential co-author* and fill the first five entries below

Name:	Hanna Vehkamäki
Date of invitation as potential co-author:	-
(Not for <i>main authors</i>)	
Date of removal from potential co-author:	dd.mm.yyyy
Past and planned responsibilities:	Past: Methodology development, Supervision Planned: Reviewing and editing first draft, Supervision

Date(s) received manuscript draft(s):	03.06.2021,21.06.2021	
Potential co-author whose name is listed above fills the following entries		
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>		
I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	14.05.2021	
Full name for author list:		
Email:	hanna.vehkamaki@helsinki.fi	
Affiliation(s):	INAR /University of Helsinki	
ORCID:	0000-0002-5018-1255	
Funding source(s) to be acknowledged (along with relevant details):	European Research Council project 692891-DAMOCLES	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No	
(No need to fill rest of the entries if “Yes”)		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	Conceptualization Ideas	Y
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	Y
	Project administration	
	Resources	
	Software	
	Supervision	Y
	Validation	
	Visualization	
	Writing – original draft	
	Writing – review & editing	Y
Other:		
Conflict(s) of interest (if any):	No	
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	28.06.2021	

Potential co-author table

(A copy of this table needs to be created for each *potential/main co-authors*)

Main authors create a table for each *potential co-author* and fill the first five entries below

Name:	Lukas Kohl
Date of invitation as potential co-author:	-

(Not for <i>main authors</i>)		
Date of removal from potential co-author:	dd.mm.yyyy	
Past and planned responsibilities:	Past: Methodology development Planned: Writing specific parts of first draft, Reviewing and editing first draft.	
Date(s) received manuscript draft(s):	03.06.2021, 21.06.2021	
Potential co-author whose name is listed above fills the following entries		
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>		
I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	14.05.2021	
Full name for author list:		
Email:	lukas.kohl@helsinki.fi	
Affiliation(s):	1) University of Helsinki, Department of Agriculture, Environmental Soil Science Unit, Viikinkaari 9, 00790 Helsinki, Finland 2) University of Helsinki, Institute for Atmosphere and Earth System Research/Forest Research, Viikinkaari 9, 00790 Helsinki, Finland	
ORCID:	0000-0002-5902-9444	
Funding source(s) to be acknowledged (along with relevant details):	LK received a MarieSkłodowska-Curie Actions Fellowship from the European Union's Horizon 2020 research and innovation program (grant agreement number 843511)	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No	
(No need to fill rest of the entries if "Yes")		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type 'Y' for 'yes' or 'N' for 'no'/'not relevant' next to each option, or fill in your contribution in "Other")	Conceptualization Ideas	Y
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	
	Project administration	
	Resources	
	Software	
	Supervision	
	Validation	
	Visualization	Y
	Writing – original draft	
	Writing – review & editing	Y
Other:		
Conflict(s) of interest (if any):	No	
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	22.06.2021	

Potential co-author table		
<i>(A copy of this table needs to be created for each potential/main co-authors)</i>		
Main authors create a table for each potential co-author and fill the first five entries below		
Name:	Rima Baalbaki	
Date of invitation as potential co-author:	17.05.2021	
<i>(Not for main authors)</i>		
Date of removal from potential co-author:	dd.mm.yyyy	
Past and planned responsibilities:	Past: Methodology development Planned: Reviewing and editing first draft	
Date(s) received manuscript draft(s):	03.06.2021, 21.06.2021	
Potential co-author whose name is listed above fills the following entries		
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>		
I agree to the planned responsibilities and accept potential co-authorship on:	17.05.2021	
Full name for author list:	Rima Baalbaki	
Email:	Rima.baalbaki@helsinki.fi	
Affiliation(s):	Institute for Atmospheric and Earth System Research (INAR) / Physics, Faculty of Science, University of Helsinki, P.O. Box 64, Helsinki, 00014, Finland	
ORCID:	0000-0002-4480-2107	
Funding source(s) to be acknowledged (along with relevant details):	RB acknowledges support from the EMME-CARE project which received funding from the European Union's Horizon 2020 Research and Innovation Programme, under Grant Agreement No. 697 856612 and from the Cyprus Government.	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No	
(No need to fill rest of the entries if "Yes")		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type 'Y' for 'yes' or 'N' for 'no'/'not relevant' next to each option, or fill in your contribution in "Other")	Conceptualization Ideas	
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	Y
	Project administration	
	Resources	
	Software	
	Supervision	
	Validation	
	Visualization	Y
	Writing – original draft	
Writing – review & editing	Y	

	Other:
Conflict(s) of interest (if any):	No
I have read the manuscript and agree with the main conclusions:	Yes
Date of completion of checklist:	27.06.2021

Potential co-author table		
(A copy of this table needs to be created for each <i>potential/main co-authors</i>)		
Main authors create a table for each <i>potential co-author</i> and fill the first five entries below		
Name:	Taina Ruuskanen	
Date of invitation as potential co-author:	17.05.2021	
(Not for <i>main authors</i>)		
Date of removal from potential co-author:	dd.mm.yyyy	
Past and planned responsibilities:	Past: Methodology development Planned: Reviewing and editing first draft	
Date(s) received manuscript draft(s):	03.06.2021, 21.06.2021	
Potential co-author whose name is listed above fills the following entries		
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>		
I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	18.05.2021	
Full name for author list:	Taina M. Ruuskanen	
Email:	Taina.ruuskanen@helsinki.fi	
Affiliation(s):	INAR /University of Helsinki	
ORCID:		
Funding source(s) to be acknowledged (along with relevant details):		
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No	
(No need to fill rest of the entries if “Yes”)		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	Conceptualization Ideas	
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	Y
	Project administration	
	Resources	
	Software	
	Supervision	
Validation		

	Visualization	
	Writing – original draft	
	Writing – review & editing	Y
	Other:	
Conflict(s) of interest (if any):	No	
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	22.06.2021	

Potential co-author table		
<i>(A copy of this table needs to be created for each potential/main co-authors)</i>		
Main authors create a table for each potential co-author and fill the first five entries below		
Name:	Olli-Pekka Siira	
Date of invitation as potential co-author:	17.05.2021	
<i>(Not for main authors)</i>		
Date of removal from potential co-author:	dd.mm.yyyy	
Past and planned responsibilities:	Past: Methodology development Planned: Reviewing and editing first draft	
Date(s) received manuscript draft(s):	03.06.2021, 21.06.2021	
Potential co-author whose name is listed above fills the following entries		
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>		
I agree to the planned responsibilities and accept potential co-authorship on:	17.05.2021	
Full name for author list:	Olli-Pekka Siira	
Email:	olli-pekka.siira@helsinki.fi	
Affiliation(s):	INAR / Physics	
ORCID:	0000-0003-2604-8080	
Funding source(s) to be acknowledged (along with relevant details):	Academy of Finland (ACCC Flagship 337549)	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>		
I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No	
(No need to fill rest of the entries if “Yes”)		
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	Conceptualization Ideas	
	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	Y
	Project administration	
	Resources	

	Software	
	Supervision	
	Validation	
	Visualization	
	Writing – original draft	
	Writing – review & editing	Y
	Other:	
Conflict(s) of interest (if any):	None	
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	22.06.2021	

Potential co-author table

(A copy of this table needs to be created for each *potential/main co-authors*)

Main authors create a table for each potential co-author and fill the first five entries below

Name:	Federico Bianchi
Date of invitation as potential co-author:	17.05.2021
(Not for <i>main authors</i>)	
Date of removal from potential co-author:	dd.mm.yyyy
Past and planned responsibilities:	Past: Methodology development Planned: Reviewing and editing first draft
Date(s) received manuscript draft(s):	03.06.2021, 21.06.2021

Potential co-author whose name is listed above fills the following entries

Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):

I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	20.05.2021
Full name for author list:	Federico Bianchi
Email:	Federico.bianchi@helsinki.fi
Affiliation(s):	INAR
ORCID:	https://orcid.org/0000-0003-2996-3604
Funding source(s) to be acknowledged (along with relevant details):	ERC – CHAPAs Nr. 850614 Academy of Finland Nr. 315203

Fill the following sections any time before the manuscript is close to being submitted:

I want to be listed in the acknowledgment section of this manuscript, not as co-author	Yes/No
(No need to fill rest of the entries if “Yes”)	
Contribution to manuscript (E.g., using CRediT taxonomy): (Type ‘Y’ for ‘yes’ or ‘N’ for ‘no’/‘not relevant’ next to each option, or fill in your contribution in “Other”)	Conceptualization Ideas
	Data curation
	Formal analysis
	Funding acquisition

	Investigation	
	Methodology	Y
	Project administration	
	Resources	
	Software	
	Supervision	
	Validation	
	Visualization	
	Writing – original draft	
	Writing – review & editing	Y
	Other:	
Conflict(s) of interest (if any):		
I have read the manuscript and agree with the main conclusions:	Yes	
Date of completion of checklist:	24.06.2021	

Potential co-author table	
(A copy of this table needs to be created for each <i>potential/main co-authors</i>)	
Main authors create a table for each <i>potential co-author</i> and fill the first five entries below	
Name:	Teemu Hölttä
Date of invitation as potential co-author:	17.05.2021
(Not for <i>main authors</i>)	
Date of removal from potential co-author:	dd.mm.yyyy
Past and planned responsibilities:	Past: Methodology development Planned: Reviewing and editing first draft
Date(s) received manuscript draft(s):	-
Potential co-author whose name is listed above fills the following entries	
<i>Fill the following sections upon receiving this form (Information provided can be used for manuscript-related conference presentations):</i>	
I agree to the planned responsibilities and accept <i>potential co-authorship</i> on:	dd.mm.yyyy
Full name for author list:	
Email:	
Affiliation(s):	
ORCID:	
Funding source(s) to be acknowledged (along with relevant details):	
<i>Fill the following sections any time before the manuscript is close to being submitted:</i>	
I want to be listed in the acknowledgment section of this manuscript, not as co-author	YES (20.05.2021)
(No need to fill rest of the entries if “Yes”)	
	Conceptualization Ideas

Contribution to manuscript (E.g., using CRediT taxonomy): (Type 'Y' for 'yes' or 'N' for 'no'/'not relevant' next to each option, or fill in your contribution in "Other")	Data curation	
	Formal analysis	
	Funding acquisition	
	Investigation	
	Methodology	
	Project administration	
	Resources	
	Software	
	Supervision	
	Validation	
	Visualization	
	Writing – original draft	
	Writing – review & editing	
	Other:	
Conflict(s) of interest (if any):		
I have read the manuscript and agree with the main conclusions:	Yes/No	
Date of completion of checklist:	dd.mm.yyyy	

SI 3 INAR center-wide authorship issues

SI 3.1 INAR center-wide authorship survey

Form is scheduled: publicity starts 14.1.2021 14.12 and ends 30.1.2021 8.00

INAR author list questionnaire

All INAR staff members are welcome to answer this questionnaire. The questions are based on the group discussions during the authorship discussion event on 18 November, 2020. Please respond to the questionnaire latest by 29 January, 2021.

Background information

Gender

Female

Male

Other or do not wish to specify

Career stage / personnel group

MSc/PhD student

Postdoctoral researcher

Senior researcher*

Technical staff

* any kind of professor, university lecturer, research director, university researcher, academy research fellow, levels 3&4

Co-authorship and last author

Check the boxes that describe the most important/frequent issues you have faced related to authorship practices.

Have you encountered problematic situations related to a person (another person or you) unduly included or left out of an author list when someone has:

- only acquired data (lab or field) which was already published elsewhere, but is again used in this work?
- only taken care of calibration, maintenance and/or collecting the data?
- only written a model/code which is now further used and developed by others?
- only helped with analysis or creating a figure for the manuscript?
- not commented any manuscript version?
- only commented the manuscript?
- only been responsible for the technical support for campaigns and instrumentation?
- only been mentoring or teaching basic analysis tools?
- not contributed to the paper at all but their authorship is insisted by the leading authors?
- only been collecting already published long-term data are now used to constrain a model?
- a contribution (modelling, measurements, etc.) that has not been included in the final paper as originally planned? only measured data that are openly available to everyone to download?
- only contributed to the paper through providing the funding?
- only participated in data analysis during a winter / summer school?
- established long-term measurements and/or a permanent station?
- been assigned as the last author on the basis that they came up with idea and funding, but supervision was done by another senior scientist?
- been assigned as the last author when they are not familiar with the work and only commented on the manuscript?

Workplace communication culture

Check all the boxes matching your experiences

Have you experienced

- disagreement with the order of authors in the author list?
- difficulties in bringing up authorship issues due to, for example, power imbalance / personal preoccupation? that your ideas have not been acknowledged?
- "add me on your paper, I add you on mine?"
- someone asking to contribute to the paper in the last stages of data analysis or manuscript writing? other, what? (specify below)
- Other, what?

SI 3.2 Authorship issues addressed by the Authorship Working Group

The five most common issues based on the center-wide survey (SI 3.1) addressed directly by the Authorship Working Group:

- Not commented on any manuscript version
- Only commented on the manuscript
- Disagreement concerning order of authors
- Power imbalance and personal preoccupation
- Someone asking to contribute to paper in last stages