We thank the editor for his positive feedback. We provide below some answers to the editor's remarks.

Q1: *In Section 5 on perspectives, I would ask for a short discussion on (existing, recognised) limitations when used this tool. Several interesting capabilities for diverse combinations are shown in this section (such as for gaming purposes), can you think of some tool's limitations to mention them in the text.*

> **A1**: The editor is right, as most tools, `airGRteaching` has some limitations.
>
> The first one is that so far only GR hydrological models are available in `airGRteaching`. Adding other models could be possible, but would require tremendous efforts (for instance, it would require the adding of a model scheme for each model, the interface could become less handy with models presenting over 10 parameters to optimise, and calibration would be far less rapid).
>
> In addition, it is not possible for the user to build its own hydrological model by adding, for example, reservoirs (with different discharge functions) and unit hydrographs, to help understand each compartment of a model. Other limitations, and those are mentioned in section 2.3, are that `airGRteaching` offers only a limited set of modelling options, compared to `airGR`. This however could also be seen as a strength, as proposing too many options could be cumbersome on a user's perspective, and these limitations are therefore voluntary.
>
> Finally, remote sensed data, other than meteo or hydro data, cannot be used in `airGRteaching` at the moment (see answer to Question 3). In addition, the effect land cover changes cannot directly be assets to `airGRteaching`.
>
> We will rename section 5 as *Limitations and perspectives* and mention these limitations.

Q2: *Could you add your opinion, to which of 23 unsolved problems in hydrology (UPHJ, https://www.tandfonline.com/doi/full/10.1080/02626667.2019.1620507) this tool might contribute?*

> **A2**: This is an excellent suggestion. As such, the `airGRteaching` tool is not intended to be used to realise extended hydrological research studies, and therefore it does not aim to be used to contribute to the actual solving of any of the 23 UPHs. However, as it permits to teach hydrology, to understand hydrological processes and to masterize hydrological modelling, we believe that `airGRteaching` could be used as a preliminary step in the solving of some UPHs. Namely, **UPH19** (*How can hydrological models be adapted to be able to extrapolate to changing conditions, including changing vegetation dynamics?*) and **UPH20** (*How can we disentangle and reduce model structural/parameter/input uncertainty in hydrological prediction?*), due to the many model parameter manipulations and calibration/evaluation exercises that `airGRteaching` proposes are good candidates. We also believe that this tool can contribute to UPH21 (*How can the (un)certainty in hydrological predictions be communicated to decision makers and the general public?*) as it has already been used by

several decision makers managers in hydrological trainings. airGRteaching can be seen as a gateway to mastering airGR (Coron et al., 2017; Coron et al., 2023) and other airGR-dependent packages, and thus indirectly helping to solve other UPHs. This is notably the case for questions linked to usage, thanks to the airGRiwrm package (Dorchies et al., 2022) for Integrated Water Resources Management (**UPH22**: *What are the synergies and tradeoffs between societal goals related to water management (e.g. water-environment-energy-food-health)?* & **UPH23**: *What is the role of water in migration, urbanisation and the dynamics of human civilisations, and what are the implications for contemporary water management?* airGRiwrm could help to solve problems of spatial heterogeneity and change of scale (**UPH5:** *What causes spatial heterogeneity and homogeneity in runoff, evaporation, subsurface water and material fluxes (carbon and other nutrients, sediments), and in their sensitivity to their controls (e.g. snow fall regime, aridity, reaction coefficients)?* & **UPH6**: *What are the hydrologic laws at the catchment scale and how do they change with scale?*), because it simplifies the use of airGR in a semi-distributed mode. The airGRdatassim package (Piazzi et al., 2021; Piazzi & Delaigue, 2021), which enables data assimilation, could be link to questions of prediction uncertainty (**UPH20**).
These elements will be added in Section 5.

Q3: *Furthermore, some sentences about measurements (hydrometry, remote sensed data) and their importance (precision/error, frequency, ...) when using such tools as airGRteaching should be added to stress the need of proper model validation - if some wants to use data of his/her own and not using available airGRdatasets package.*

A3: Except from the onlineversion of the graphical version interface, users can use their own meteo and hydro datasets, as mentioned at line 4 page 15, or at line 2 page 21. We will try to make it clearer in the revised version.

Remote sensed data, other than meteo or hydro data, cannot be used in the airGRteaching at the moment. The use of the remote sensed data belong to airGR (see section 2.2 regarding snow satellite data) and constitutes only a potential perspective of the airGRteaching package, as mentioned in section 5. In addition, proper uncertainty exercises, apart from the calibration on different periods, do not belong so far to this tool, which we see as a simple way of starting hydrological modelling. However, the editor is right and these are important issues, which we believe they can be tackled with airGR. We will make that clearer in the revised version of the manuscript.

Q4: *Last but not least, a comment how to use this tool in teaching can be added (also from your own experiences): during informal education for general public, as a part of graduate studies in natural sciences and engineering... reading the manuscript, the research/scientific flair is prevailing over educational/teaching one.*

A4: Among the four authors, two give a few dozens of hours of teaching every year, and one is an assistant professor.

We and colleagues have used `airGRteaching` to teach to four different audiences:

- graduate students (in geography and hydrology) and engineering students,
- engineers working in consulting firms,
- researchers,
- and the general public at science fair-type events.

Our experience with these different audiences has shown that `airGRteaching` is useful in helping **students** understand a variety of basic concepts: from the choice of an objective function, to the sensitivity of model simulations to individual parameters, the difference between model states and model parameters, the difference between automatic and manual calibration, and the informative and complementary value of a variety of plots. Projects that are more elaborate have been developed and are listed in section 4. For students, depending on the time allotted and their experience, we use the graphical interface with or without the use of computer code. For **researchers**, it is more a matter of introducing them specifically to GR models, and the interface is used as an introduction of the GR model structure. For **engineers working in consulting firms**, it's often somewhere in between, depending on their experience and their background. The GUI is frequently used to avoid being bogged down in problems of form and to concentrate exclusively on the underlying concepts of hydrological modeling. The simplified code version allows a smooth transition to the more complex `airGR` code. For the **general public**, the aim is usually to introduce them using the `airGRteaching` GUI to one of the fields of hydrology, to help them understand what a model is, and to raise their awareness of applications such as flood and low-flow forecasting, and global change.

We will comment on that in section 5.

References:

Coron, L., Delaigue, O., Thirel, G., Dorchies, D., Perrin, C. and Michel, C. (2023). airGR: Suite of GR Hydrological Models for Precipitation-Runoff Modelling. R package version 1.7.4, doi: 10.15454/EX11NA, URL: https://CRAN.R-project.org/package=airGR.

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Piazzi, G., Thirel, G., Perrin, C. and Delaigue, O. (2021). Sequential data assimilation for streamflow forecasting: assessing the sensitivity to uncertinties and to updated variables of a conceptual hydrological model. Water Resources Research, 57, e2020WR028390, doi: 10.1029/2020WR028390.