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Towards harmonization in the use of rainfall simulators – On the pursuit of better and more comparable experimental results

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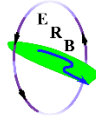
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18th Biennial Conference of the Euromediterranean Network of Experimental and Representative Basins (ERB 2022),
Portoferraio, Elba Island (Italy), 07-10 June 2022

Towards harmonization in the use of rainfall simulators – On the pursuit of better and more comparable experimental results

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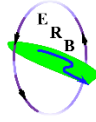
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Abstract

Rainfall simulators are an important experimental tool in hydrology and geomorphology studies. Rainfall simulators of different spatial scales have been widely used both in the laboratory and in the field for a wide range of research objectives and purposes. Furthermore, rainfall simulators can be developed and adapted to address more specific research demands. This flexibility and adaptability, which is usually seen as a major advantage, can also have some drawbacks, such as the significant diversity in the type, sizing, form, operation, and methodologies that can be found in rainfall simulators. The literature presents more than 250 different rainfall simulator setups. As such, this leads to numerous difficulties when comparing the results and outputs obtained from different rainfall simulator studies. Standardisation of rainfall simulation is one way of ensuring that key design and experimental methodologies (*i.e.*, design criteria, working procedures and data collection) are aligned. However, standardisation reduces the adaptability of rainfall simulators to answer specific research needs. Thus, ‘harmonization’ (*i.e.*, aligning rainfall simulation within a series of best practices but appreciating that variation in design characteristics should exist to allow rainfall simulators to be best suited for different research purposes) would deeply enhance the characterization and comparability of rainfall simulators. Harmonization will thus add value to simulated rainfall-based research as synergies can arise by establishing comparisons between different studies when this was not possible before. Rainfall simulators should be in harmony, rather than working in unison.

Having this in mind, it was found important to promote further the discussion on this issue. This poster aims to call upon researchers working with rainfall simulators, or with data obtained from simulated rainfall, to set a platform to pursue harmonization of rainfall simulator based experimental research. Moreover, this poster also aims to call the international research community attention to a future international meeting dealing with this theme, to be held in the spring or summer of 2023 in Coimbra, Portugal.



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