"My paper in 140 Seconds"

Being able to explain research clearly and effectively to a general audience is a skill that serves well in the academic and professional endeavours. Video content is also becoming increasingly important in science communication: the results of research projects, especially publicly funded ones, are not only of interest to other scientists, but also to a broad mass of people. The format **"My paper in 140 Seconds"** addresses scientists in any discipline.

"My paper in 140 Seconds" is a valuable opportunity to develop and showcase communication skills and should follow this structure:

How to construct the content of a *"My paper in 140 Seconds" video* [1] [2]

You are free in preparing a presentation or just some slides that should appear in the background.

basic introduction to the field, comprehensible to a scientist in any discipline (1-2 sentences).

more detailed background, *comprehensible to scientists in related disciplines (2-3 sentences)*

general problem being addressed by this particular study (1-2 sentence)

summary of main result (with the words "**here we show**" or their equivalent, in 1-2 sentence)

what the main result reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge (2-3 sentences)

results put into more general context (1-2 sentences)

broader perspective, *readily comprehensible to a scientist in any discipline, may be included if the editor considers that the accessibility of the paper is significantly enhanced by their inclusion. (2-3 sentences.*

Soil moisture plays a crucial role in hydrological, biological, and biogeochemical processes. Continuous soil moisture datasets are essential for meteorology, energy cycles, and engineering. Remote Sensing techniques make it possible to observe soil moisture at a global scale with sufficient time continuity, even in difficult and inaccessible locations. passive microwave radiometers are one of the most efficient remote sensing technologies for soil moisture estimation, due to their high sensitivity to the soil dielectric constant, which has a direct relationship with SM. Due to the coarse scale of soil moisture products retrieved from passive microwave observations, several downscaling methods have been developed to enable regional scale applications. However, it can be challenging for users to access final data products and algorithms, as well as managing different data sources and formats, various data processing methods, and the complexity of the workflows from raw data to information products. The purpose of this study is implementing a procedure for estimating soil moisture at 1 km spatial resolution using fusing various remote sensing data. Here, the Google Earth Engine is used to implement a workflow for retrieving soil moisture using MODIS optical/thermal measurements and the SMAP passive microwave coarse scale product. We estimated soil moisture at a depth of 0–5cm across the African continent by applying a random forest downscaling method. The results of this study were evaluated against in-situ measurements of three validation networks. Overall, in comparison to the original passive microwave soil moisture product, which was limited by a spatial resolution of only 9 km, this method is able to estimate soil moisture at 1 km spatial resolution with acceptable accuracy. The results show the proposed method in google earth engine provides a precise estimation of soil moisture with a higher spatial resolution across the entire continent. The workflow of this research, along with all the data utilized in this study, as well as the results and a comprehensive discussion about them, can be found in this paper. You can access this paper via the DOI link provided (https://doi.org/10.1080/20964471.2023.2257905).

[1] In accordance with the "nature abstract guidelines" https://www.nature.com/documents/nature-summary-paragraph.pdf

[2] ***Best practice Example*** *provided by Dr. Farzane Mohseni, PostDoc: "The synergies of SMAP enhanced and MODIS products in a random forest regression for estimating 1 km soil moisture over Africa using Google Earth Engine" by Farzane Mohseni, Amirhossein Ahrari, Jan-Henrik Haunert, Carsten Montzka*

“My paper in 140 seconds”

You published a paper?

Contact us…

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…in order to plan the recording for **“My paper in 140 Seconds”**

Requirements for the presenter:

- Good preparation is essential!
- Rehearse!
- Keep to time!
- Time required for the shoot: depending on your preparation, approx. 1 h
- Shooting location will be determined individually

“Green Screen Check List”

Video recordings in front of green screens place particular demands on the protagonists, in order to ensure a successful separation of the foreground from the background.

- Do not wear clothes or jewellery with green tones (this includes turquoise and olive).
- If possible, do not wear bright white clothing, especially in the shoulder region.
- Avoid clothing (especially dark clothes) with a silky shine.
- Items of clothing with a small pattern are also unsuitable. During recording this can lead to an annoying moiré effect (visual artefact).
- Complex pieces of jewellery (earrings, wide finger rings) or delicate applications on clothing should be avoided, as the can reflect the green screen.
- Clothing style, make-up and hairstyle: we recommend a casual clothing style, but you should wear what you feel most comfortable in, special Make-up and hairstyling is not necessary but should be suitable for recording.

Don’t worry…

… intro and outro of the video are standardized and provided by DETECT![3]

… if something goes wrong, it can be cut out. You just start again!

… the edited/cutted version must be approved by you!

… you will be asked to give your written consent for publication at the end!

[3]applies to DETECT members only