

# ***Interactive comment on “Optical flow models as an open benchmark for radar-based precipitation nowcasting (rainymotion v0.1)” by Georgy Ayzel et al.***

**R. Uijlenhoet (Referee)**

remko.uijlenhoet@wur.nl

Received and published: 15 November 2018

I would like to congratulate Maik Heistermann and colleagues with yet another valuable contribution to the rapidly developing field of open software, in this case in the weather radar domain. They have previously pioneered the open weather radar processing software through their python software library WRADLIB. Now they're doing the same regarding radar-based rainfall nowcasting. The timing couldn't be better, given the growing interest for this subject on all continents.

Overall, I am very happy with this manuscript and recommend to accept it with minor revisions. I have the following remarks that I invite the authors to consider taking into

Printer-friendly version

Discussion paper



account:

- References to important papers from Marc Berenguer, Daniel Sempere-Torres and Geoff Pegram are missing (SBMcast, etc.). These are very relevant papers in the context of this manuscript, which discuss the issue of spectral decomposition of precipitation fields and scale-dependent radar nowcasting.
- Reference to Berne et al. (2004; JoH) is missing. This is a (by now) classical paper on space-time scales of rainfall fields required for (urban) hydrological applications.
- Reference to pySTEPS appears to be missing (<https://github.com/pySTEPS>). This is the open source Python version of STEPS. Highly relevant given the topic and focus of this manuscript.
- Please provide some more detailed background information concerning: Shi–Tomasi corner detector (Shi and Tomasi, 1994); Lucas–Kanade optical flow algorithm (Lucas and Kanade, 1981); affine transformation matrix (Schneider and Eberly, 2003); warping and interpolation (Wolberg, 1990).
- “Supplementary” → “Supplementary Information” (several times in the manuscript).
- P.4, l.8: “24 recent radar images” → “24 most recent radar images”.
- P.5, l.20: “models’ description” → “model description”.
- P.6, l.25–26: “rainfall rates prediction” → “rainfall rate prediction”.
- P.8, l.6: Insert comma before “which”.
- Is “RV” the same as “RadVor”?
- General: (much) more detailed captions; figures + captions should be as self-contained as possible.
- Journal (Nature), issue, page numbers missing from reference to Bauer et al. (2015).

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2018-166>, 2018.

**GMDD**

---

Interactive  
comment

Printer-friendly version

Discussion paper

