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- synthesized flood waves





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# GLOFRIM A global framework for hydrologic-hydrodynamic inundation modeling

## DFM only

LFP only

Fig 1: (a) DFM and LFP schematization of the model domain in the Amazon; (b) coupled 1-D channels and 2-D cells; (c) benchmarking simulated inundation extent of DFM with LFP with resulting hit rate H, false alarm ration F, and critical success index C

## **Methodology:**

- Applying only global data sets
- Exposing model variables via Basic Model Interface 2)
- 3) Amazon basin (Fig. 1a)
- Transferring into LISFLOOD-FP (LFP) compatible set-up 4)
- 5) D PCR-GLOBWB cells (Fig. 1b)
- 6) PCR (Fig. 2)







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**References:** Hoch, J. M., Haag, A. V., Dam, A. van, Winsemius, H. C., van Beek, R. and Bierkens, M. F. P.: Assessing the impact of hydrodynamics on large-scale flood wave propagation - a case study for the Amazon Basin, Hydrol. Earth Syst. Sci., 2017. Hoch, J. M., Neal, J. C., Baart, F., van Beek, R., Winsemius, H. C., Bates, P. D. and Bierkens, M. F. P.: GLOFRIM v1.0 – A globally applicable computational framework for integrated hydrologic-hydrodynamic modelling, Geophys. Model Dev., 2017.

Table 1: Results of discharge	validation
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	DFM	LFP	PCR
<b>r</b> <sup>2</sup>	0.92	0.87	0.77
RMSE	25,289	23,006	30,652
KGE	0.77	0.82	0.69

