Interactive comment on "Camera-based Water Stage and Discharge Prediction with Machine Learning" *by* Kenneth W. Chapman et al.

Anonymous Referee #2

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The manuscript proposes a technique for filling stage or discharge measurement gaps using time-laps imagery from a single camera.

While the manuscript is well organized and the analyses refer to a good data set, I am skeptical on the aim of the paper, specifically on its usefulness.

As mentioned in the Introduction, Gauge-Cam system is an emerging topic and promising approach since it would allow to measure stage and velocity in challenging conditions were common approaches could fail. Time-laps imagery is able to provide stage and velocity measurements (or estimation), so I do not fully understand the reason to install a single camera just to fill gaps that, eventually, will be generated by the functioning of a traditional sensor. If the problem is to prevent possible service interruption, I would just include an additional similar sensor in the station, so if one does not work,

there will be time to substitute it without having gaps. The installation of a single camera is cheaper than traditional sensors, however it is not so easy and straightforward, and in any case implies costs. So, its implementation is justified if the aim is to provide additional information compared to the traditional sensor or to substitute it since it is cheaper. So, presently I do not see any practical usefulness of the proposed approach.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2020-575, 2020.