Reviewer1. The preprint states that: "The developed simulator to determine a specific flood volume represents an alternative approach to the SWMM model that, unlike current approaches, is calibratable with limited topological data availability, therefore generates a lower cost due to the less amount and specificity of data required." and this is very interesting and important, but no information is given regarding the accuracy loss, or not, or the error in relation to the traditional swmm model, please insert information.

In the revised manuscript, the following modifications were made:

„*For the determined independent variables (Equation 7, 8), calculations were performed with the LRM and SWMM model (for 35 rainfall events, $P_t \geq 5$ mm and $t_r \leq 120$ min) assuming values of catchment characteristics and topological data within ±0.2 in the separated sub-catchments. The results of the validation of the developed model for the identification* of the specific flood volume are given in Tables S5 - S11. In the range of $N_{F(SWMM)} = (0 - 6)$, the relative difference in the number of episodes when $\kappa \geq 13$ m^3·ha^{-1} did not exceed 20%, and for $N_{F(SWMM)} = <6, 19>$ was 15 - 33%.

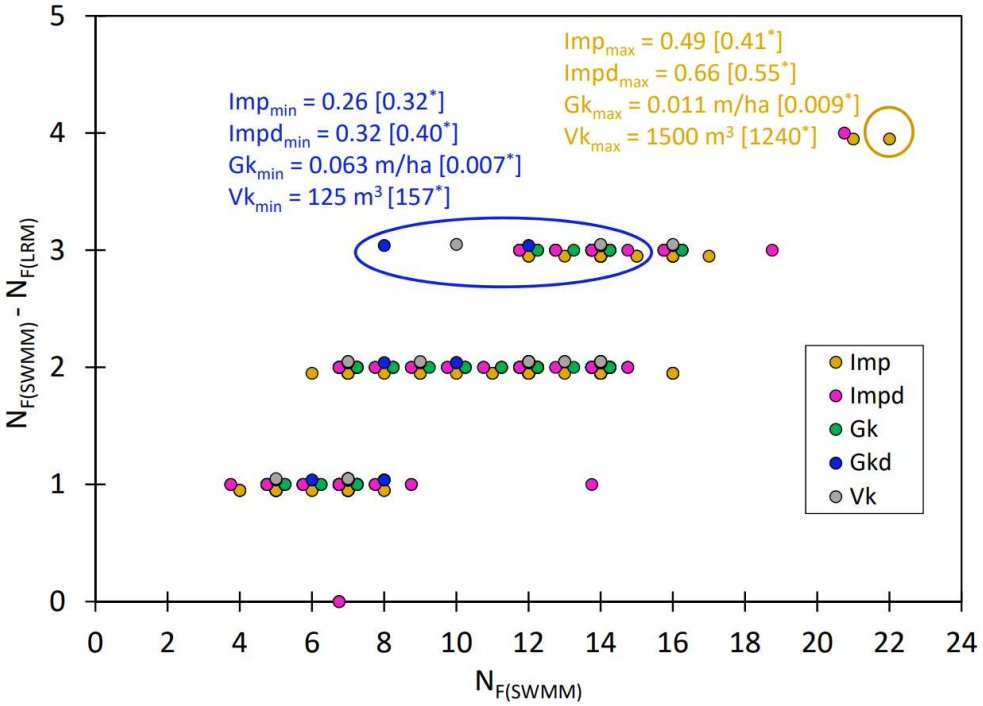

Figure XX. Comparison of LRM and SWMM simulation results of the number of episodes when the specific flood volume was greater than 13m^3·ha^{-1} (where: $N_{F(SWMM)}$ – prediction of SWMM, $N_{F(LRM)}$ – prediction of LRM; * - minimum, maximum values of the catchment characteristics, topology of the stormwater network in Table 1; yellow - the upper limit of the model, blue - the lower limit of the model).

The maximum difference between LRM and SWMM simulations ($N_{F(SWMM)}$ - $N_{F(LRM)}$ = 4) was obtained for Imp = 0.49, Impd = 0.66, Gk = 0.011 $m \cdot ha^{-1}$, Vk = 1500 m^3, which corresponds to the extreme values of the catchment characteristics, the topology of the sewer network. Verification results showed that the maximum difference in the number of events when $\kappa > 13$ $m^3 \cdot ha^{-1}$ by the ML model and SWMM for Imp = 0.26 - 0.50, Impd = 0.32 - 0.66, Gk = 0.0068 - 0.011 $m^3 \cdot ha^{-1}$, Gkd = 0.0009 – 0.0013 $m^3 \cdot ha^{-1}$ did not exceed 4 episodes (Figure XX). The calculations performed confirm the high fitting of the calculations with measurements of the number of episodes when the specific flood volume exceeds 13 $m^3 \cdot ha^{-1}$." (L 400 – 414).

~~*„A validation of the obtained logistic regression was additionally performed using the SWMM model for 35 rainfall events (catchment characteristics and topological data were analysed for separated sub-catchments J, O, S within ±20%), in order to assess the extent of applicability of the obtained model.*~~ In this study, 35 independent rainfall events were assumed for model validation, for which P_t = 6.0 - 15.0 mm and t_r = 30 - 120 min. For validation of the LRM model, catchments J, O, S were selected, in which characteristics of catchment (Imp, Impd) and topology network (Gk, Gkd, Jkp) were varied in the interaction scheme. At the variant generation step, combinations of two inputs were used to verify model, then values of which were changed in a three-point scheme -0.2/0/+0.2. The calculations included the following steps:

a) selection of two input data (x1, x2) to change; the values of the other parameters were taken as the mean of the data according to Table 1,

b) determination of combinations x1, x2 for verification calculations such that: 1.2·x1 - 1.2·x1, 1.2·x1 - x2, 1.2·x1 - 0.8·x2; x1 - 1.2·x2, x1 - x2, x1 - 0.8·x2; 0.8·x2 - 1.2·x1, 0.8·x2 - x1, 0.8-x2 - 0.8·x1; all combinations of catchment and sewer network characteristics were analysed in this study, resulting in a total of 135 verification variants for 3 sub-catchments (135-35-3 = 14175 simulations),

c) modification of sub-catchment characteristics according to point b)

d) calculation with a logit model and SWMM of the value of the specific flood volume." (L61 – 70), Support Information.