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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Development of high-resolution multi-scale modelling system for simulation of coastal-fluvial urban flooding" *by* A. I. Olbert et al.

Anonymous Referee #1

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The manuscript proposed multi-scale nested (MSN) Flood to complex coastal-fluvial urban flooding in the estuary-lying Cork City and its capability of the multilevel nesting integrated system to accurately simulate the extent and level of urban flooding was critically examined. The proposed method and model developed in the paper was novel and valid. Therefore this work is suitable for publication after answering some questions. 1. Line 266 to 268: 'The domains of CG30 and CG06 models only partially overlap. Water elevations computed on CG30 are passed to the eastern boundary of CG06 while River Lee flow data are specified at the western boundary of CG06.' So is there any problem of inconsistency between the CG30 data and River Lee flow data? What approach was applied to reduce it?

2. Line 360 to 363 and Figure 7: While the elevation results of PG90 and CG30 are both accurate, further analysis is necessary to explain why accuracy of velocity using PG90 was much lower than that of CG30.

3. Line 423 to 425 and Figure 13: The analysis on infrequent random oscillations in water levels occurring in CG06 (Fig. 13 a-c) should be more detailed.

4. Line 413 to 425 and Table 4: In order to estimate the accuracy of GC02, error statistics of water elevations simulated by the CG02 and measured data should be more suitable than comparing CG06 and CG02 (Table 4). So why use CG06ïij§

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