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How do we best estimate fluvial flood risk in urban environments? : The case of the city of Eilenburg, Germany

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Flooding is one of the most impactful natural hazards. In particular, by looking at the data of damages from natural hazards in Europe collected in the International Disaster Database (EM-DAT) one can see a significant increase over the past four decades of both frequency of floods and associated economic damages.
Similarly, dramatic trends are also found by analyzing other types of flood losses, such as the number of people affected by floods, homeless, injured or killed.
To deal with the aforementioned increase of flood risk, more and more efforts are being made to promote integrated flood risk management, for instance, at the end of 2007, the European Community (EC) issued the Flood Directive (F.D.) 2007/60/EC.
One of the major innovations was that the F.D. 2007/60/C requires Member State to carry out risk maps and then take appropriate measures to reduce the evaluated risk.
The main goal of this research was to estimate flood damaging using a computer code based on a recently developed method (KULTURisk, www.kulturisk.eu) and to compare the estimated damage with the observed one.
The study area was the municipality of Eilenburg, which in 2002 was subjected to a destructive flood event.
Were produced flood damage maps with new procedures (e.g. KULTURisk) and compared the estimates with observed data.
This study showed the possibility to extend the lesson learned with the Eilenburg case study in other similar contexts.
The outcomes of this test provided interesting insights about the flood risk mapping, which are expected to contribute to raise awareness to the flooding issues,to plan (structural and/or non-structural) measures of flood risk reduction and to support better land-use and urban planning.