

2 **Comment on “Assessing changes on urban flood vulnerability through mapping land**  
3 **use from historical information” by M. Boudou et al.**

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5 The paper was finally accepted for publication. We add some proposals of improvement from  
6 Fabio Luino on the English language. As the version was in fact already post-edited by  
7 Michael Carpenter, a professional translator from UK, we did only minor changes.

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9 Please find below the corrections.

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12 **Comments by Fabio LUINO**

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14 *It gives me great pleasure to read again the paper of the French colleagues. I have noticed*  
15 *that my suggestions and advice have been accepted. The English language is good even if*  
16 *there are some mistakes. For example I can read the term PERSONS instead of PEOPLE.*  
17 *Probably another mother tongue review is necessary.*

18

19 *I underline some improvements.*

20 *Page 2 line 11 – “Persons”*

21 The word has been retained

22

23 *Three times the word « assessing» in three lines (19-20-21).*

24 Even if the repetition is not problematic in English, we changed the words.

25

26 on that definition, **assessing** the vulnerability and its evolution can be broken down into two  
27 main steps: firstly, **appraising** the exposure by listing the elements at risk and secondly,  
28 **evaluating** the susceptibility of the elements at risk (Merz et al., 2007).

29

30 *Page 3 line 4 – “analysies”*

31 Corrected

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33 *Page 5 line 1 – “wet end ~~to~~during the year 1909”*

34 Corrected

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36 *line 6 – “several cavity collapses” change in “collapsing of several cavities”*

37 Corrected

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39 Page 13

40 **8 5 Conclusion and perspectives**

41 9 This **paper study** presents a case study on the urban vulnerability of two French cities that  
42 were largely **impacted in** floods **occurring** in January 1910 and March 1930. This approach  
43 gives an insight **into** the complexity of flood risk evolution, **not ignoring the while also taking**  
44 local characteristics **into account**. ~~Old maps (or Mapped historical sources) Mapping historical~~  
45 ~~sources~~ can provide reliable information on the flood vulnerability in the past, but this  
46 requires **a necessary evaluation of the modifications occurred in the examined area some**  
47 ~~preliminary work~~. A first step is necessary to locate and geo-**reference** the historical

1 information within the present geographical reference system. Qualitative information  
2 (images, technical reports, national and local newspaper articles, paintings, marble plaques,  
3 etc. ...) can be interpreted as a complement to historical maps on land use. An assessment of  
4 the population **exposed** at risk within spatial units can be inferred from technical documents  
5 with nominative lists of **inhabitants persons** as well from old censuses. Historical information  
6 on past floods can therefore be useful when building scenarios on future possible floods,  
7 providing a reliable reference of what might be possible in terms of water depth, flow velocity  
8 and flood extent. Additional work is needed to account for possible changes both in  
9 vulnerability and flood hazard over the past several decades (from historical floods to the  
10 present day) and for future decades (prospective studies). It is also important to **consider bear**  
11 **in mind** the uncertainties associated with historical data and to use relevant scales when  
12 mapping vulnerability indicators. As usual, the temporal analysis of flood risk evolution at a  
13 local scale implies a good knowledge of the general context of the socio-economic  
14 development of territories, as well as changes in the recollection and perception of risk.  
15 According to data availability, this study focuses on **only** a small component of vulnerability  
16 **only**. However, to carry out a comprehensive flood vulnerability analysis, other indicators  
17 should be taken into account. After the Xynthia storm **surgeds** in 2010 (41 fatalities due to  
18 floods in France), Vinet *et al.* (2012) showed that the age of the population is a key  
19 component of local vulnerability. It is clear that the insurance system may benefit from  
20 similar **analyseis** on urban flood vulnerability over the last few decades

21  
22 **ONLY THIS ONE ABOUT INSURANCE?**

23 **in order to better evaluate the impact on various vulnerability scenarios on flood damages.**  
24 **Some prospective mitigation strategies could be established and be financially supported by**  
25 **public authorities, following the example of the experience “ALABRI” (2012), which led to**  
26 **set up individual flood protections in the houses preliminary identified as exposed in the Gard**  
27 **department (<http://www.les-gardons.com/alabri/>).**

28 This study addressed **the** issue of flood vulnerability, which is an important component of the  
29 flood risk. In parallel, research on flood hazard is also necessary to simulate past floods in a  
30 present-day context, **considering ~~taking into account~~** modifications of the river  
31 (**morphological** changes and river engineering) and new settlements on the flood plain.

## 32 **FINDINGS**

33 ***I BELIEVE THE AUTHORS MAY SUGGEST BETTER SOLUTIONS FOR A MITIGATION***  
34 ***OF THE RISK AS IF THEY HAVE SOME DEGREE OF AUTONOMY IN ORDER TO***  
35 ***COLLABORATE SIDE BY SIDE WITH THE STAKEHOLDERS.***