

## ***Interactive comment on “A spatial Bayesian network model to assess the benefits of early warning for urban flood risk to people” by S. Balbi et al.***

**s. balbi**

stef.balbi@gmail.com

Received and published: 17 December 2015

Thanks for the thorough review. We acknowledge that sometimes the flow of the article is a bit tortuous and we'll do our best to improve readability by trying to better link the sections.

Regarding your request for a sketch, in our original view Figure 1 was meant to explain how the modules interact and thus cover this aspect.

In Section 2.3 "Data and model components" we explained that: 1. Hazard (H) is a Bayesian model developed out of a deterministic equation with 3 inputs (depth, velocity

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)



and debris factor). 2. Vulnerability (V) is a Bayesian model developed by a team of experts belonging to the KULTURisk Project (since it's not trained on data we analyze its behavior in Section 3.1). 3. Exposure (E) is Data about population density or people in public buildings.

Point 1 (H) and 2 (V) are combined with a Bayesian Network (trained with the data provided by 25 experts' opinions as explained in Section 2.4) that produces 4 outputs representing probabilities of getting affected (these are in fact probability distributions in each pixel of the landscape) and Point 3 (E) provides the total number of targets in the landscape that could be affected by those probabilities, so the last passage of section 2.3 is just a multiplication that happens in each pixel.

We attach the Bayesian Networks in .net format for transparency.

We find that an additional figure could be redundant (adding Very little to figure 1 and 3 combined), however if the editor requires it we are available to provide a figure (or a table) like the attached.

Responses to the specific comments will follow.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/3/C2708/2015/nhessd-3-C2708-2015-supplement.zip>

---

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 6615, 2015.

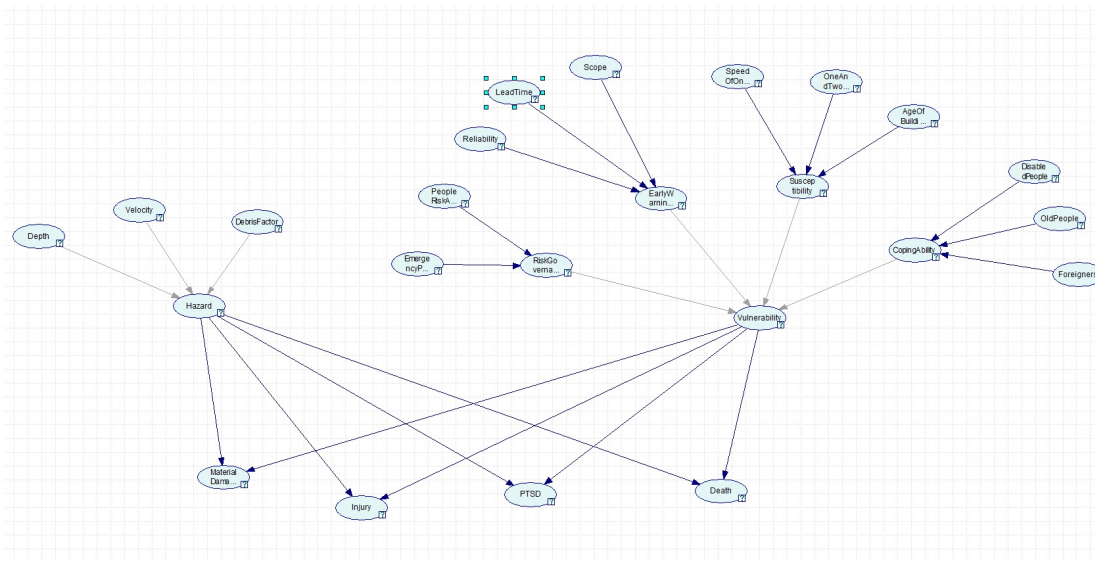
Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

## Interactive Comment



**Fig. 1.** overall network

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

