Dear Leticia Palazzi Perez,

Congratulations on a successful submission of your abstract to the 2013 AAG Annual Meeting, Los Angeles, California. Please remember that the AAG accepts all submissions, and that you will be expected to present. Your Program Identification Number (PIN) is: 90070550. This email should serve as your confirmation of abstract acceptance. You may want to keep a copy for your records. In order to save paper, please save as a digital file. Your abstract details are as follows:

Title: The urban vulnerability rate based on extreme weather events in the metropolitan region of São

Paulo

**Keywords:** extreme weather events, urban vulnerability, natural disasters, geoprocessing

Type: Illustrated Paper

Abstract: The unruly growth of large Brazilian cities resulting from the occupation of floodplains,

channeling of rivers, and impermeabilization of the soil, has affected the urban microclimate, increasing heavy rains, which cause disasters associated to extreme weather events, leading to immeasurable losses to the population, slowdown in the economy, and casualties.

By using the data of the 19 rain gauges spread across the São Paulo metropolitan area, we found 7 (seven) extreme weather events with significantly heavier rainfall than the averages for the same period between 2005 and 2011: 23 May/2005; 05 Feb/2007; 18 Dec/2007; 06 Sep/2009; 07 Dec/2009; 20 Jan/2010 e 10 Jan/2011. Based on Kriging interpolation method, we carried out spatial mapping of rainfall for 48 and 24 hours before and after these dates, as

well as for the dates of storms.

Following this, the rainfall maps were crossed with spatial mapping of the Civil Defense actions in São Paulo during landslides, wall and house collapses, and flooding, on the same dates above. This was done in order to obtain the amount of rainfall capable of causing such disasters. Finally, the spatial map crossing was compared with information on the occupation of the soil, location of favelas, and resident population, thus leading to the mapping of vulnerable areas. The final results, in addition to producing a vulnerability map, also provide an urban vulnerability rate for the São Paulo metropolitan region based on extreme weather events.

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**Topics:** Cartography

Spatial Analysis & Modeling Climatology and Meteorology

Notes: I understand that there will be a 4'x8' posterboard for me to use, but that there will be no other

audio visual equipment available. Additionally, all abstracts will be published in the conference

proceedings and online. Submission of an abstract implies permission to publish.

You are responsible for the content of your abstract, title and authors, please review your abstract and make necessary edits. You may return to the submission console to edit your abstract and/or submit as session if you wish.

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