GIS BASED METHOD TO IDENTIFY VULNERABLE URBAN FABRICS TO EARTHQUAKE

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Urban dynamics

Urban fabrics

Formation

Transformations

Vulnerability

Risk

Seismic Scenarios

Spatial distribution

?Relevant scale for mapping probable losses?

Criteria: usefulness for urban requalification purposes and reliability
Case study

A part of the city of Oran (Algeria)

Probable damage (GNDT, RISK-UE) for 5000 buildings.

Design scenario: IX (EMS98 scale) (Historical 1779 event)

Objective: optimal representation displaying vulnerability distribution at the scale of urban fabrics
1) BLOCK

- Building
- Urban block

2) CENSUS TRACT

- Constructed surface
- Damage

Arithmetic mean: 0.60
Weighted mean: 0.77

3) URBAN ENTITY

3.1) Secondary urban entity
3.2) Tertiary urban entity

4) ZONE WITH A PREDEFINED EXTENSION

4.1) Point Buffer
4.1) Polygon Buffer