

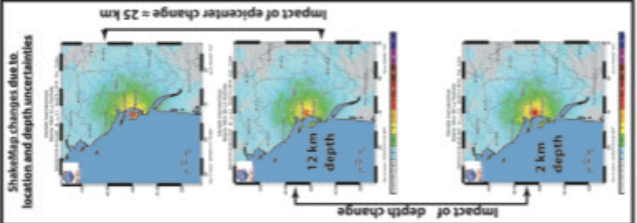
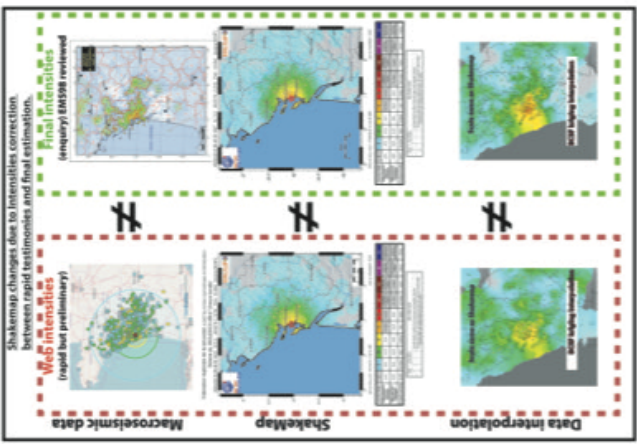
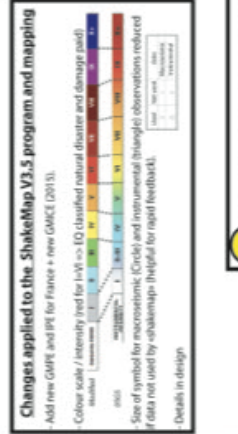
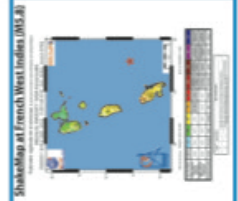
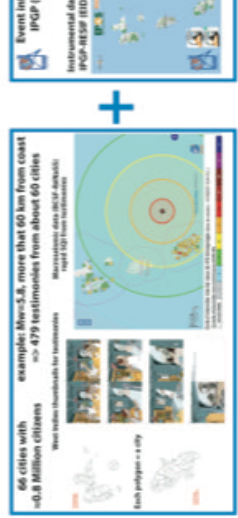
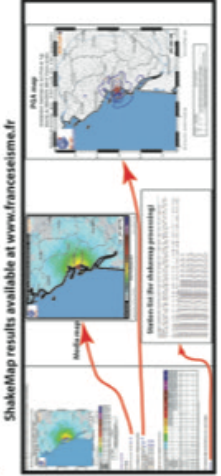
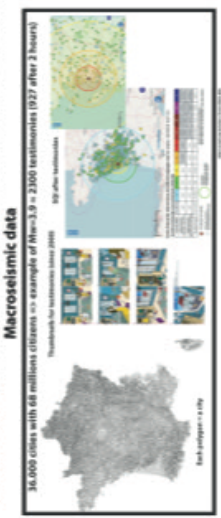
Shakemap Based on Instrumental and Macroseismic Data in France: Feedbacks on Modified v3.5 and Expectations on V4.

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The seismicity of France is moderate in its Metropolitan part and related to a subduction context in its West Indies part. RESIF network (www.resif.fr) and West Indies (IPGP-OVS) and bordering countries observatories provide us instrumental data. These accelerometric and velocimetric data are available in near real time. The BCSF-REMASS (EOST) provides intensities, preliminary values are based on rapid citizen testimonies, usually several thousands for Mw>=4.5, and final values EMS98 are based on study including field investigations, if damage. With about 1 city per 15 square km, we sample in details the territory when the about 400 seismic stations give irreplaceable precise ground motion parameters.

versus the location of the epicenter. An expectation would be to select automatically the GMPE or PPE that fit at best with the observations. Moreover, the variation of the attenuation versus azimuth seems to be strongly smoothed by the GMPE and PPE used. The V3.5 helped us to detect important ML overestimation in few regions, but the ShakeMap has still a strong dependency to the hypocenter localization, which cannot be corrected for example by using collected macroseismic data. We built a ShakeMap Working Group that brings together the French researchers and observatories (transversal action seismicity RESIF).



Huge improvement by including intensities especially at short distance. Rapid feedback on consistency between instrumental and macroseismic data (depth, epicenter, magnitude) thanks to our picture update

Highly dependent on epicenter location and depth (not corrected). Highly dependent on design of GMPE / PPE (not corrected, => regionalization). Smooth the observations and reduce the subjectivity of the ground shaking => Do not fit to the real shaking, the average model seems to have the priority

Exchange of macroseismic data in real time between European observatories (WGS of ESCI, France has 7 neighbouring countries). Include regional attenuation law (high variation within metropolitan France and crustal or subduction events in the West Indies). Improve site effect input parameters (slope as proxy today). Integration of the source dimension (fault). Define for each event the 'bests' (authoritative) ShakeMap associated to each event of the seismic catalog versus time. Improvement within a French working group-shakeMap-Consider ShakeMap a new information for improving SHA. Consider ShakeMap a new information for improving SHA. Damage assessment?

Include regional attenuation law (modules selects and -STRECs of W7). Test of a set of attenuation laws and select the best. Use separate attenuation law for small and large events. Weighing macroseismic versus instrumental data and versus distance. Connect the depth (Depth baal and location (Loc Bias) by fitting the data at short epicentral distance. A integration of fault dimension (versus Focal mechanism magnitude), position of epicenter versus fault length. Include a directivity factor (observed for a Mw=4.1). Rapid access to modify the parameters