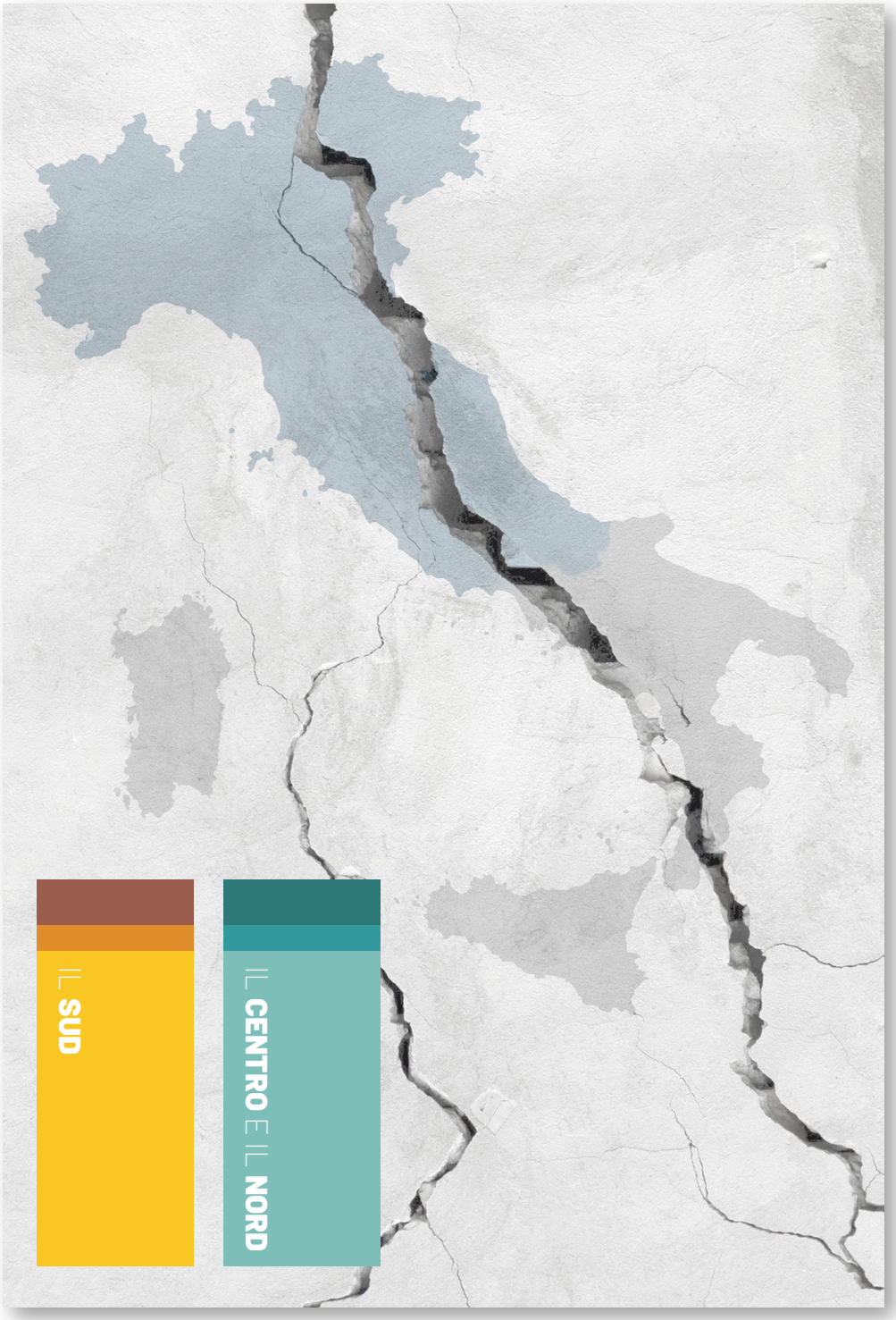
ATLAS: **ITALY, EARTHQUAKE COUNTRY**

Seismic hazard of Italian cities

Emanuela Guidoboni and Gianluca Valensise



FONDAZIONE
CONSIGLIO NAZIONALE INGEGNERI

CONSIGLIO NAZIONALE
DEGLI INGEGNERI

Is *seismic hazard* simply simply embodied by the numbers proposed in current assessment models, or there is more to it? How can we delineate it, if not by resorting to what has happened in the past? Know, remember, understand: so as to feed authoritative and state-of-the-art scientific data into decision-making circuits. Ask ourselves: What has been the impact of destructions and reconstructions on the quality of today's built environment? What will future earthquakes cause in our cities, the beating heart of the country? Earthquake prevention plans are meant to help mitigating damage and losses from future strong earthquakes; but have these plans been correctly devised and implemented?




The ATLAS is a tool for exploring the many facets of seismic hazard and risk in Italy, starting with the CITIES. A layered and time-dilated text, specifically designed to disseminate up-to-date knowledge among the building and environmental safety professionals, but also to stimulate understanding of the seismic fate of the CITIES and their territories, in order to raise the necessary awareness.



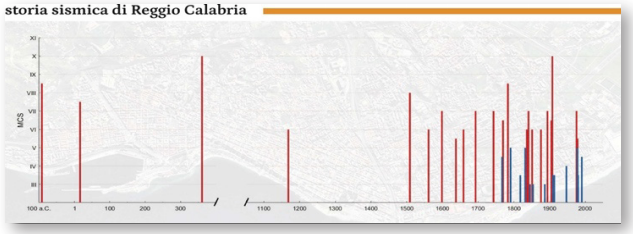

Contents of the ATLAS

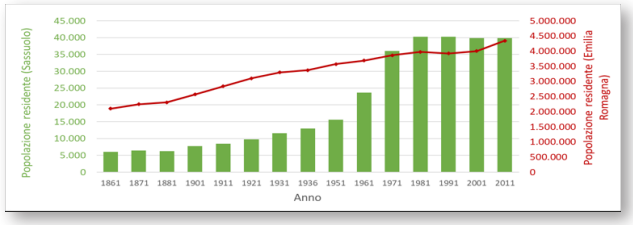
Regional contexts: 64 annotated thematic regional maps, of which 20 relate to Southern Italy and 44 to Central and Northern Italy, respectively. They illustrate the distribution of past earthquakes, seismogenic areas, documented earthquake-induced landslides, areas of enhanced landslide susceptibility and tsunami. And they also display the location of instrumental earthquake data recorded over the past forty years.

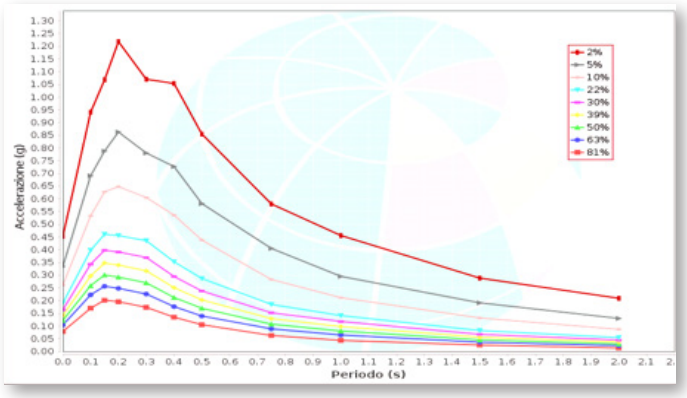
Selected cities, having a population of 30,000 or more (with some significant exceptions), which suffered at least one major destruction (MCS intensity VIII and above): 61 in Southern Italy and 56 in Central and Northern Italy. For every city, the effects of each earthquake (for some southern cities also of each eruption) that occurred from the ancient world to the 21st century are described on the basis of contemporary sources and evaluated quantitatively (data from *Catalogo dei Forti Terremoti in Italia* v. 5, or CFTI5Med 2018, with several improvements and new elaborations).

Hundreds of monuments, described along with the earthquake damage they suffered, often multiple times: they illustrate a progressive erosion of our artistic heritage, urging the inception of a new awareness and the strengthening of multidisciplinary cooperation.

Over a hundred earthquakes of Mw 6.0 and up: 49 in Southern Italy and 68 in Central and Northern Italy, generally unknown to the local history and often ignored even by administrators and by housing professionals. Events of this size had a profound impact on Italian history (data from CFTI5Med 2018, with several improvements and new elaborations).



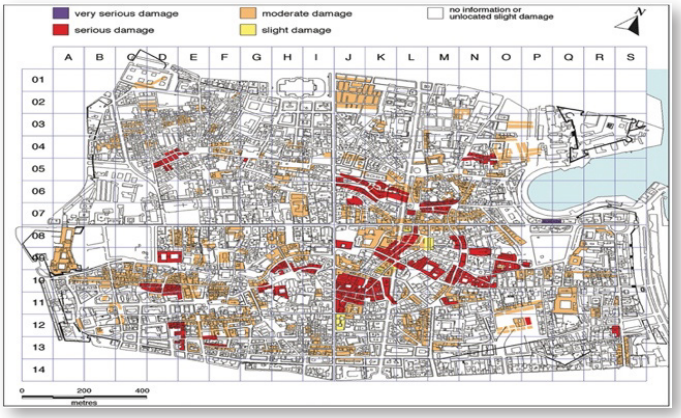


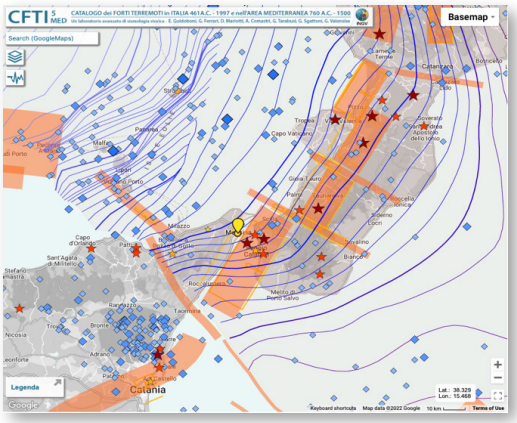


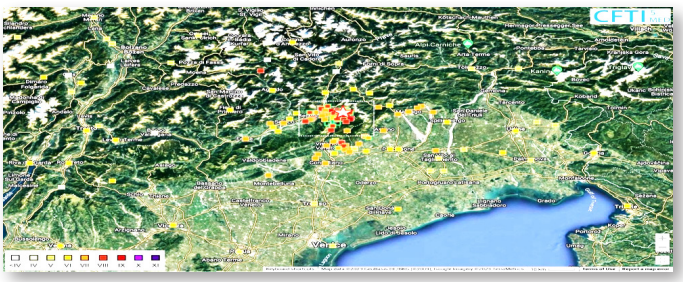
Seismotectonic analyses: an overview on the progress of the most advanced research concerning the causes and effects of earthquakes in Italy, along with the relevant outstanding scientific questions.

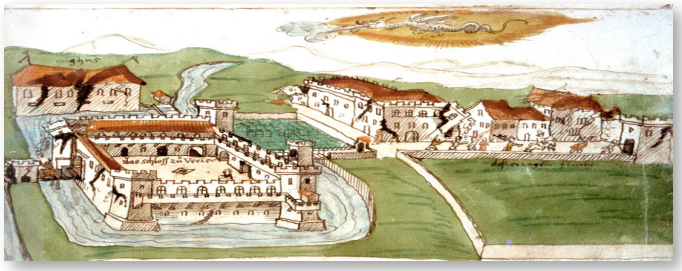
Post-earthquake reconstructions: a long-standing Italian issue; a historical complex matter often ignored by administrators and urban planners. After the emergency settlements and the 'temporary cities', new urban plans, innovative master plans and emerging building techniques have molded new visions of the city. Destructive earthquakes are always tragic occurrences, yet sometimes they fostered new opportunities for seismology and earthquake engineering. How was rebuilding done in the past? How do we rebuild today? What vision of the future will ensure effective earthquake prevention plans?

Hazard and statistical data: the description of each city includes its basic seismic hazard expressed by the expected Peak Ground Acceleration (PGA), the population trends, the extent and quality of buildings since the beginning of the 20th century (from ISTAT data).









ATLAS: **ITALY, EARTHQUAKE COUNTRY**

Seismic hazard of Italian cities

Emanuela Guidoboni and Gianluca Valensise

The Introductions of the two volumes feature contributions from:
Teresa Crespellani, Salvatore D'Agostino, Roberto De Marco, Elisa Guagenti, Emanuela Guidoboni, Gianluca Pescaroli, Antonio Michele Tralli, Francesca Valensise, Gianluca Valensise, Paola Vannoli.

For placing orders: info@fondazionecni.it

FONDAZIONE CONSIGLIO NAZIONALE INGEGNERI

CONSIGLIO NAZIONALE DEGLI INGEGNERI