ARCHIVING SEISMIC R/WAR DATA FROM ITALY AND SURROUNDING SEAS

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Deep seismic Refraction and Wide-Angle-Reflection (R/WAR) data is information of primary interest for the understanding of Lithosphere formation and evolution. In the past two decades seismic velocity models, resulting from several deep controlled source seismic programs, have led to the understanding of the architecture of the lithosphere of relevant tectonic areas. It is getting more and more important archive the seismic data on ready-to-use platforms for further modeling, large syntheses and planning of future new projects.

Today, seismic data are commonly digitally recorded and therefore easily archived and stored with a given format. However, paper records or analog magnetic tapes, produced in early days of controlled source seismology programs, are valuable data that might be lost if a proper digitization and archiving process is not applied. This project aims to assemble all the deep seismic R/WAR data collected over Italy and surrounding seas (22.000 km), archive them and make them available to the scientific community.

Analog seismic records, mostly single component, collected before 1994, are 10% of the whole dataset and consist of more than 200 profiles (partially reversed) for about 18.000 km of total length data. Some of these profiles were never modeled using the modern 2D ray-tracing techniques. They image the lithosphere at great depths, although with a low spatial resolution (about 23.000 waveforms). The remaining 90% of the data cover only 4.000 km length with about 470.000 waveforms. They are 3-component, high-resolution R/WAR digital waveforms generated by air-gun shooting and acquired on-shore Italy.

For each study area, digital (or digitized) waveforms will be stored with a common format. Additional information built-in the archive will be topographic and geologic maps, published seismic cross-sections and references.

The archive will be published on our web-page from which the user may retrieve on-line the built-in information and download the data upon request.