

in comparison to previous surveys conducted on other regions of France (Hollender et al., 2017). We were accordingly able to get consistent dispersion curve on a wide frequency band for all sites, allowing deriving S-wave velocity profiles with a satisfactory resolution up to depth of several hundreds of meter. At large depth, we obtained high velocity values (>2000 m) for all stations, which is consistent with geological context (Hercynian igneous/metamorphic rocks or Mesozoic limestone depending on the site). Contrariwise, at shallower depth, we obtained much lower velocity corresponding to weathered rocks. In comparison to previous evaluation from geological maps, the obtained VS30 values are significantly lower. This survey also gave us the opportunity to introduced site condition metadata derived from our results (current survey and previous ones) into the French RESIF web service.

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DEVELOPMENT OF A UNITED STATES COMMUNITY SHEAR WAVE VELOCITY PROFILE DATABASE

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We describe a multi-institution effort to develop an open-access shear-wave velocity (VS) profile database (PDB), which will include a public repository for VS profile data and associated metadata in the United States. VS profiles are an essential resource for ground motion modeling and other applications. The minimum requirements for a site to be included in the database are in situ geophysical VS measurements and location metadata. Other information is included as available, including geotechnical logs, penetration resistance, laboratory test data, ground water elevation, and P-wave velocity profiles. Various secondary site information such as surficial geology and topographic slope will be included from available geospatial data. The data collection stage of the project is largely complete,

with over 4500 VS profiles in our possession. A prototype data model and database schema have been developed, and ongoing work includes digitization of data and its unification across various disparate formats. The database will be presented as an online map-based interface with downloadable VS profile and metadata information. This abstract serves as a progress report to the engineering seismology community, as we continue to seek engagement and support, and continue to seek out new potential data sources. Funding for this project was provided by the USGS Earthquake Hazards Program under contract number G17AP00018.

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COMMON BEST PRACTICE PROCEDURES FOR SITE-EFFECTS CHARACTERIZATION: RESULTS FROM AN INTERNATIONAL QUESTIONNAIRE

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Setting-up standard practices, together with a clear evaluation of their quality, are becoming very important to reach high-level site-characterization metadata, useful for site effects studies, seismic microzonation, seismic hazard assessment and many other research fields. In the last years, several efforts have been done at national and international level to define standards and guidelines for seismic site characterization (e.g., Foti et al., Bull Earthquake Eng, 2017, doi:10.1007/s10518-017-0206-7; Geological Survey of Canada, Open File 7078, 2012, doi:10.4095/291753; Consortium of Organizations for Strong Motion Observation Systems, <http://www.cosmos-eq.org>; WP12-Deliverable D23.12, SESAME European research project, 2004). Within the 2017-2020 activities of the "Networking databases of site and station characterization" (WP7-NA5 of the SERA "Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe" Horizon 2020 Project), European teams are working on the best practice for site characterization and related quality assessment target to network operators and seismological and engineering communities. More specifically, the

goals of this task are: (i) to evaluate the most relevant site effects indicators; (ii) to write practical guidelines for site effects characterization and related site condition parameters at rock sites (including topography effects) and soft soils (including non-linear and basin effects); (iii) to propose a quality metrics on the site characterization parameters. As a first step, we have prepared a Questionnaire for collecting existing bibliography and best practice schemes to compute indicators for site effects characterization. We sent the Questionnaire to selected research groups of different countries, both partners of the SERA project (ISTERRE-CNRS, France; ETH, Switzerland; INGV, Italy; AUTH, Greece) and several external groups involved in site characterization (Caltech-USGS, USA; AFAD, Turkey; Virginia Tech USA; GFZ, Germany; ITSAK, Greece; University of Potsdam, Germany; UoT-University of Texas, USA; INGV, Italy), and collected back the answers. Each team provided the list of site effects indicators, their importance for site effects assessment (based on expert judgment) and their preferred methods of analysis for retrieving the indicators. In the Questionnaire, the site-effect indicators were grouped into (i) Scalar (e.g. resonance frequency), (ii) Depth-dependent (e.g. shear-wave Vs profile), (iii) Frequency-dependent (e.g. spectral ratio), (iv) Geological/Morphological (e.g. Surface geology/lithology unit) and (v) Advanced site-effects (e.g. numerical 2D or 3D modeling) parameters. Each indicator is described through several fields, summarized into five main subsets: Importance - in-depth index related to the amount of knowledge on site-effects characterization supplied by each indicator, and it can assume three values (basic, intermediate and top), depending on the expert judgment; Feasibility - level of difficulty to measure the target indicator (easy, average and difficult); Data - type of data used to measure the proposed indicator; Analysis - method of analysis and suggested code to derive the indicator, including the value's selection and uncertainty estimation; Bibliography - references and guidelines related to the best practice of measurement and analysis. A preliminary analysis of the Questionnaires reveals a consensus on several basic indicators, such as the resonance frequency, Vs30 or the 1D Vs profile, even if the teams use different data acquisition, analysis methods and metrics. Fewer teams indicated more advanced parameters, such as 2D-3D site

effects estimators or specific geotechnical parameters. The filled Questionnaires represent the basis of the development of standard best practice, definition of quality metrics and improvement of site condition metadata. The final results of this activity will be shared and discussed with the broader scientific community and they will be finalized in an international workshop early 2019.

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USE OF STRONG GROUND MOTION RECORDS FOR RISK MITIGATION: RECENT STUDIES ON NORTH ANATOLIAN FAULT ZONE (TURKEY)

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Estimation and mitigation of seismic risks in urban regions concern a wide range of authorities including geophysical and earthquake engineers, physical and economic planners as well as insurance companies. Risk mitigation efforts naturally involve inputs from multiple disciplines. Related studies include seismic hazard assessment, forward and inverse wave propagation models, site characterization, building fragility models and seismic loss functions. Strong motion records are the key components of these efforts. It is thus significant to continuously operate and maintain strong motion networks in seismically active regions worldwide. In this study, initially the current status of the strong motion network in Turkey is described. Next, various uses of the recently-compiled strong motion database of Turkey in engineering seismology and earthquake engineering practices are presented along with the corresponding physical processes and the mathematical models. Specific applications will be presented on ground motion prediction equations, seismic hazard analyses, high-frequency spectral attenuation (κ) estimates, strong ground motion simulations, site characterization, intensity-peak motion correlations, building fragility functions and nonlinear time history analyses in earthquake engineering. The study areas of these applications are Istanbul, Duzce and Erzincan regions located on North Anatolian fault zone in Turkey. In addition to the current practice, data-related