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TREAD - daTa and pRocesses in sEismic hAzarD

The aim of TREAD is to train a new generation of seismic hazard scientists to tackle the challenges of earthquake forecasting in complex tectonic contexts such as the Europe and Mediterranean regions. A change of paradigm in seismic hazard is necessary to be able to fully account for the specifics properties of earthquake source and seismic modes in those areas. For example, to calculate the probability of having multiple earthquake ruptures, the interaction between active faults across various space-time scales needs to be accounted for, as well as the effects of stress transfer and fault-fluid interaction in earthquake triggering. TREAD objectives are: 1) Developing a novel integrative approach to seismic hazard analysis in Europe and the Mediterranean by bridging the gap from small-scale laboratory experiments to large-scale observations. 2) Establishing physics-based earthquake modelling by linking computational modelling of earthquakes from millions of years to fractions of a second. 3) Transferring earthquake geology and computational modelling to hazard and risk assessment adapted to the need of government, industry and scientific stakeholders. To reach those objectives we gathered the TREAD consortium that comprised 14 academic institutions and 8 private partners of the highest scientific level from 7 European countries, covering frontiers knowledge and practices in observational, experimental and modelling fields. TREAD will: 1- include a unique large-scale training component to create the ground for a new generation of experts in the field of seismic hazard and risk assessment; 2-will promote interactions between seismic hazard and geomechanics practitioners and risk and decision-making activities producing an interdisciplinary and holistic training program; 3-will address factors not integrated in the actual models but essential to better anticipate seismic hazard in Europe and the Mediterranean regions.

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