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Underground site characterization for Einstein Telescope

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The underground environment as well as all surrounding areas the facility which will host Einstein Telescope will have to be characterized for site selection, and after its building for monitoring all possible source of environmental noises. An overview of all physical-chemical processes affecting GW detectors in an underground environment is considered, particularly by: a) seismic microzonation - ground shaking, liquefaction susceptibility, landslide -; b) atmospheric boundary layer - surface radiative forcing, flow velocity, temperature, moisture, turbulence and vertical mixing -; c) infrasonic spectroscopy - severe weather, lee waves, lightning and upper-atmospheric lightning -; d) thermoeleastic damping - rock thermal conductivity, rock mechanics, acoustic/seismic stress/strain coupling; e) poromechanics of fluid-saturated porous media - rock permeability, percolation processes and water table changes, rock pore size variations and water-rock interaction -; f) electric potential difference in the ground - rock resistivity, streaming current, electrokinetic phenomena, induced magnetic field -; g) radioactivity -environmental and building materials -; *et al.*

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