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Seismic imaging for topographic site effect modelling at the Low Noise Underground Laboratory (LSBB), Rustrel, France

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From June 5th to 8th, 2006 a seismic imaging experiment took place at the Low Noise Underground Laboratory (LSBB - http://lsbb.unice.fr), Rustrel, France. Two seismic lines were deployed : the first line made up of 150 vertical 14 Hz sensors, being located in the horizontal 800 m long main gallery of the Laboratory, the second line with 189 mixed vertical and 3D 0.1 Hz sensors, being distributed along the steep surface 500 m to 200 m straight above the gallery. 100 explosive shots buried 1.5 m below the surface were used to light the medium. A preliminary P-velocity 2D model is derived that allows to identify the gallery cavity and the main faults. One issue of this particular device is to process numerical wave propagation in the medium surrounding the underground laboratory, in the aim to investigate topographic amplification induced by the steep slope heterogeneity higher than 30%. A new experiment is now designed (Estoporus 2007) in order to record ground motions from regional and teleseismic seismicity.