

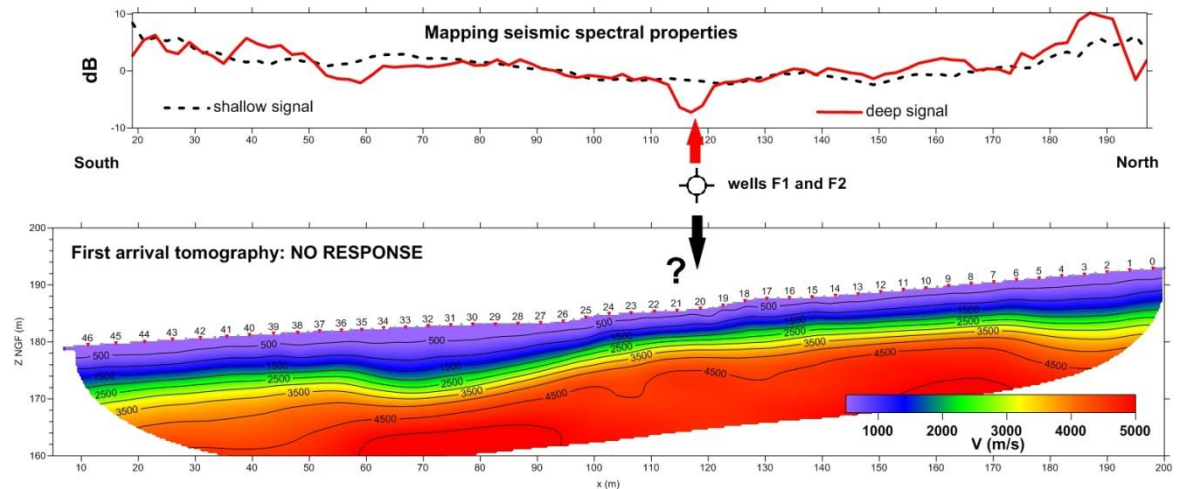
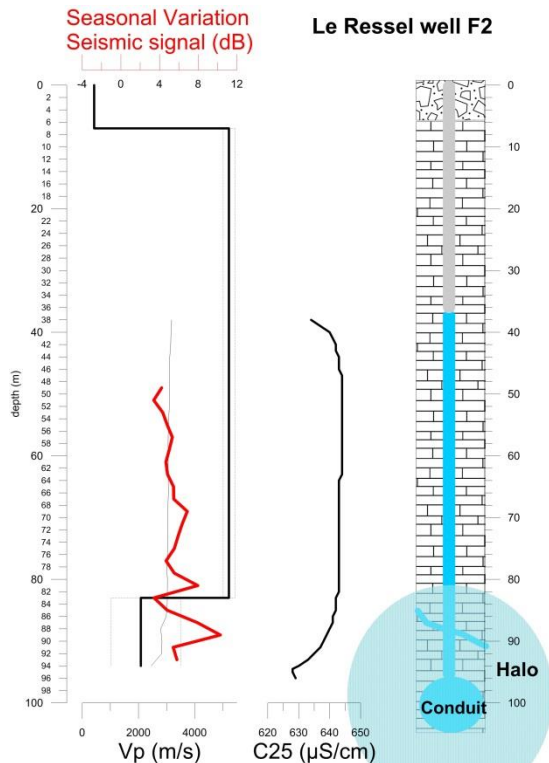
New developments in exploring the saturated zone of karst aquifers: Applications to the Quercy region (Southern France)

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New method to locate saturated heterogeneities (like karstic conduits) from seismic amplitudes:

Estimate and map spectral seismic attenuation resulting from wave-induced local flow.

Validating the method on several known targets: here the Ressel case (94m deep)

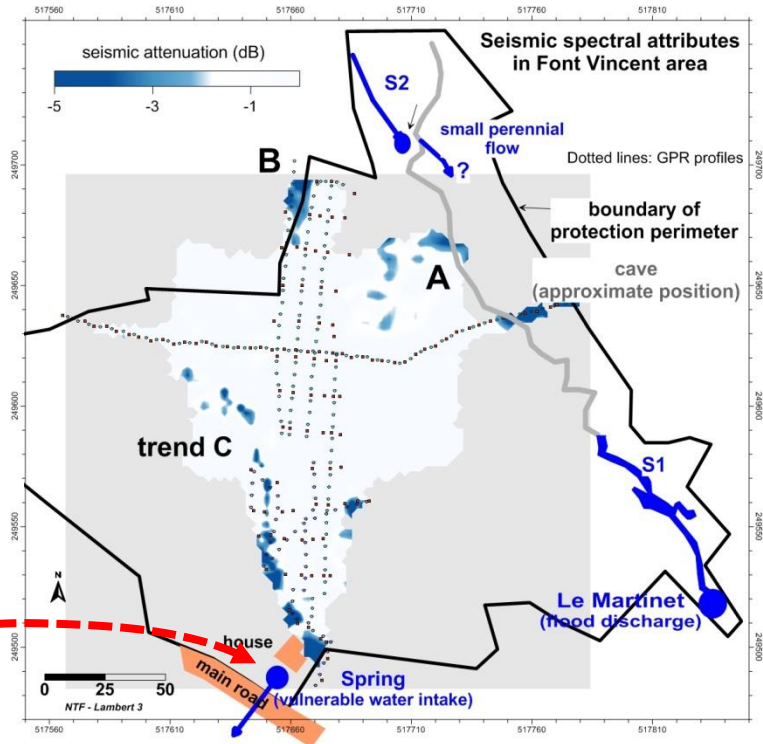


Spectral mapping shows an attenuation anomaly directly above the deep conduit.
We investigated the origin of this response with borehole measurements: the main attenuation occurs inside a halo surrounding the drain with significant seasonal variations.

Application to the Font-Vincent case

Context

- Municipal water supply.
- Necessity to relocate water intake owing to its vulnerable location.
- Well required to intercept the drain upstream.
- 3D mapping of seismic spectral attribute to locate position of 20m-30m deep small conduit (challenging...).



Results

- Three potential targets for new well (A, B C).
- Most promising trend C connecting to the spring.
- To be drill-tested after location refinement.