



Assessments of viscoelastic attenuation in sediment containing gas hydrates and free gas

F. Bouchaala

Polytech Orleans, France (fateh.bouchaala@univ-orleans.fr)

By providing additional information to the data acquired from a wave velocity profile, the use of a quality factor profile allows one to detect gas hydrates and free gas.

In this study, analysis of a P-wave velocity profile elaborated from seismic data collected over the Hydratech cruise (2002) highlighted the presence of a Bottom-Simulating Reflector, gas hydrates and free gas on the northern flank of the Storegga slide. Then, quality factor values were determined from this velocity profile and seismic data recorded over the cruise. The quality factor values were also estimated by comparing seismograms recorded over the Hydratech cruise and those calculated by using a ray-tracing model-based software taking into account viscoelastic media.

This study shows that the lowest quality factors are found in the layer below the BSR. This is in agreement with the velocity value at this layer, which is the lowest. This result confirm free gas presence in this layer.