



Coupling of geophysical instrumentation in borehole in TELSITE project

Serge Olivier, Stéphane Denis, and Guillaume Rouillé
CEA, Arpajon, France (serge.olivier@cea.fr)

Since the end of French nuclear tests on Moruroa atoll, the geo-mechanical evolution of the atoll has been controlled by a remote monitoring system called TELSITE. After 20 years of operation, the renewal of this system has been completed in recent years.

Among the updated instrumentation, 3 boreholes (300 to 600 m deep) were instrumented with 5 to 15 geophysical sensors each. Once down, the coupling between the sensors and the boreholes wall is a fundamental aspect. This coupling is made by small balls (3 to 6 mm diameter). The reasons for this choice are explained. Then, the modeling of the descent and the final descent on the site are explained.

The consequences of this coupling on the signals are presented: measurements before and after the coupling validate the approach. To finish, a discussion is held on the interest of this solution in comparison to others.