

Feasibility study on Digital Feedback Seismometer (2)

Yuichi Morita [1]

[1] E.R.I. Univ. of Tokyo

An application of digital techniques to a broadband seismometer is one of hopeful ways to improve broadband seismometers. However, the effect of quantum errors of AD and DA converters gives the limitation of its dynamic range. It seems to be the most serious defect in the digital feedback seismometer (DFS).

From numerical simulation, we examine effects of the errors and try to reduce their effects. In conclusion, combination of the over-sampling techniques and filtering ones is most effective. Additionally, high frequency DA output is also helpful. Using these techniques, we can conclude that DFS comes up with analogue broadband seismometers in its dynamic ranges. This conclusion will encourage us to realize the DFS with high precision.