Estimate of crack parameter of the Nojima fault by using velocity data

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The borehole was drilled by the Geological Survey of Japan to penetrate the Nojima fault after the 1995 Hyogoken-nanbu (Kobe) earthquake. Conventional logging, FMI and DSI were conducted. We compared P-wave velocity obtained from crack models with that observed by sonic logging in order to estimate crack parameter of the Nojima fault. The estimated crack parameter can explain the velocity and porosity changes in the logging data. The crack parameter enables us to explain the logging data both in the case of changing porosity and constant porosity when we assume that P-wave velocity and porosity changes are caused by oriented fractures.