

Data assimilation for optimal estimation of frictional parameters and prediction of afterslip in the 2003 Tokachi-oki earthquake

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A wide variety of fault slips at plate subduction zones are considered to reflect the spatial heterogeneities of frictional parameters. Thus, it is important to estimate the frictional parameters from geophysical observations. In addition, these estimated frictional parameters contribute to compute a realistic spatio-temporal evolution of fault slips. For this purpose, we have developed a technique to optimize frictional parameters and to predict a spatio-temporal evolution of slip based on an adjoint data assimilation method [Kano et al. 2010; 2013] and applied to the afterslip data in the 2003 Tokachi-oki earthquake [Kano et al. 2015]. In this presentation, we review these studies, and discuss the problems and the future plan for challenges of earthquake forecasting.

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