

## Construction of Fault Model for the Japan Sea Area based on the "Off Shore Fault evaluation Project"

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The Ministry of Education, Culture, Sports, Science and Technology, Japan was started "Off Shore Fault Evaluation Project" in 2013. In this project, collect the offshore fault survey data, analyse the data by a uniform method and construct data base.

This study is conducted by a subtheme of the Offshore Fault Evaluation Project.

The purposes of this study are construct the fault model based on the geological fault information that analysed by the Japan Agency for Marine-Earth Science and Technology (JAMSTEC). The two types of fault model we constructed that, the "Primary model" and "Consolidated model". The primary model is the fault model based on the fault information from the Offshore Fault project. The consolidated model is considered the possibility of continuing on the fault distribution and consolidate on the deeper part of the fault. The consolidate model is represented the combination of some primary models.

To construct the primary model, we define the following policies for each parameter settings that considered the epistemic uncertainty and aleatory uncertainty.

The "position, length and strikes of the fault" are based on the geological fault information of the Offshore Fault Project and "depths of the top of fault" are at sea bottom. Construct two types of settings for "fault dips". One is use the basic value and thrust fault as 45 degrees, normal fault as 60 degrees, and strike slip fault as 90 degrees. Another setting is use the "apparent dips" from Offshore Fault Project that, shallow part of the fault is steeply dipping that set by the apparent dips from geological data and deeper part is gradual dipping that adjust to be 45 degrees or 60 degrees, on the average of whole fault dips. The "bottom depths of the fault" are two patterns and one is using a 3D velocity structure models presented by this project and another is from previous study of the Japan Sea area. "Fault widths" are set from the relationship between bottom depth of the fault and dip angle, and "fault rakes" were set to thrust fault as 90 degrees., Normal fault as 270 degrees., Right lateral fault as 0 degrees., Left lateral fault as 180 degrees. The "average of fault slips" is set by the empirical relationship between fault area and Mw by Irikura and Miyake, 2001 and we also considered the large slip areas that, 30 % of fault area and twofold average of slip.

The number of primary models, we set was about 240 models and consolidated models that represented the combination of some primary models are about 550 models. For the consolidated models, it was considered the reproductively for previous occurred earthquakes using the tsunami simulations (Ohsumi et. al., 2015: SSJ meeting).

The Offshore Fault Project will be planning for the Nansei Islands area.

Keywords: Off Shore Fault Evaluation Project, fault model, Japan Sea area