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Formation process of anticline which two reverse faults intersect underground with analogue model experiment

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On this research, we run sand box experiment and investigate formation process of anticline which two reverse faults intersect underground. This method is excellent technique to examine underground geometry of geologic structures and its development processes by simplifying the geological and mechanical environment of target area. For experimental materials, we used Toyoura sand. This is so proper materials to approximate brittle fracture. First, we prepared the model which makes horizontal pressure. And we could observe process of generating reverse faults and anticline. Through all experiments, we took regularly image data at minute intervals for analysis. And we analyzed results of the experiments with PIV analysis. This technique helped us to see behavior of the experimental materials, thus we could get the data of these displacement and shearing strain distribution.

And through this method, finally we could find the relationship between the mode of fault development and the structure which lie east and west about the target structure. We are sure that our experimental result is simple to apply on the structure which has symmetric section like our model.

Keywords: analogue model experiment, fault, fold, PIV analysis