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A new method for evaluating fault activity based on fault gouge properties -Occurrences and colors of fault gouges from

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In order to develop a new method for evaluating fault activities, we have analyzed a relationship between fault activities and fault gouge properties. In particular, we focused on the colors, clay minerals and chemical compositions of fault gouges.

We report occurrences of fault gouges in the western part of Tottori Prefecture, southwest Japan, particularly attentive for the colors of fault gouges derived from granite. Many minor faults accompanying fault gouges are distributed in the area. The fault gouges from the aftershock area of 2000 Tottori-ken Seibu earthquake are characterized by pale-green, white and yellowish brown. In contrast, gouges from the Nichinanko lineament and Komachi-Ohdani lineament area are characterized by yellowish brown, orange and pink. On the a*-b* diagram, these two area are clearly distinguished. The difference of fault gouge color might be corresponding to the difference of fault activity.

Keywords: fault gouge, fault rocks, 2000 Tottori-ken Seibu earthquake, active fault, fault activity