

High fault activity associated with the sea level change in the postglacial age

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The continental glaciers retreated and then the sea level rose more than 100m from the end of the last glacial age to about 6 kyr before present. The global distribution of the surface load has changed to deform the shape of the earth. These changes should cause a significant stress variation in the crust and then a high activity of faulting. In this study I investigate if such a activation really took place and what degree the activation was, if any.

The used data are the ages of past faulting events of active faults in Japan which are reported from trench surveys of the faults. A total number of the past events which are obtained from the literature is about 500. The temporal variation of the frequency of faulting is estimated for the past 25 kyr. If an age is given as a ^{14}C age, the calendar year is estimated by adopting INTCAL98.

The obtained frequency naturally decreases with the age. The frequency in a range of about 15 to 6 kyr before present is apparently higher than the trend for the last 6 kyr; there is a weak peak about 6-7 kyr ago. It is very likely that such a high activity was generated by the temporal variation in the crust in the postglacial age. It is suggested that the activity in a period from about 15 kyr to 6 kyr before present was about twice as high as the recent activity.