

EGU2020-21089

<https://doi.org/10.5194/egusphere-egu2020-21089>

EGU General Assembly 2020

© Author(s) 2020. This work is distributed under the Creative Commons Attribution 4.0 License.



## The formation model of neotectonic fault zone in the Ulsan Fault Zone, Gyeongsang basin, Korea

**Ji-Hoon Kang**

Andong National University, College of Natural Science, Department of Earth & Environmental Sciences, Andong-si, Republic of Korea (jhkang@anu.ac.kr)

The Yangsan Fault Zone (YFZ) of NNE trend and Ulsan Fault Zone (UFZ) of NNW trend are developed in the Gyeongsang Basin, the southern part of the Korean Peninsula, and many active faults and Quaternary faults (ATV and QTY Fs) have been found in these fault zones. The tectonic movement of the YFZ can be explained at least by two different strike-slip movements, named as D1 sinistral strike-slip and D2 dextral strike-slip, and then two different dip-slip movements, named as D3 conjugate reverse-slip and D4 Quaternary reverse-slip. The surfaces of D3 fault in basement rocks are extended those of D4 fault in the covering Quaternary deposits, like the other Quaternary faults within the YFZ. The D3 and D4 faults were formed under the same compression of (N)NW-(S)SE direction. After that, the active faults occurred in the Korean Peninsula under the compression of E-W direction. The ATV and QTY Fs thrust the Bulguksa igneous rocks of Late Cretaceous-Early Tertiary upon the Quaternary deposits or are developed within the Quaternary deposits in the UFZ, showing the reverse-slip sense of top-to-the west movement. This presentation is suggested the formation model of neotectonic fault zone in the UFZ on the basis of the various trends [(W)NW, N-S, (E)NE trends] of fault surfaces of the ATV and QTY Fs found in the UFZ, and the zigzag-form connecting line of their outcrop sites, and the deformation history (the N-S trending 1st reverse-slip faulting by the 1st E-W compression and associated the E-W trending strike-slip tear faulting, the N-S trending 2nd reverse-slip faulting by the 2nd E-W compression) of neotectonic fault zone in the Singye-ri valley around the UFZ, and the compressive arc-shaped lineaments which convex to the west reported in the YFZ.

**Acknowledgements:** This research was financially supported by a grant (2017-MPSS31-006) from the Research and Development of Active fault of Korean Peninsula funded by the Korean Ministry of the Interior and Safety, and by Ministry of public Administration and Security as Disaster Prevention Safety Human resource development Project.