

# Geomorphic development and ages of low-relief surfaces estimated by an ignimbrite in the Abukuma Mountains, Northeast Japan

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In order to clarify the geomorphic development and ages of low-relief surfaces distributed in the northwestern part of Abukuma Mountains, Northeast Japan, geomorphological and geological survey were carried out. Low-relief surfaces named Funahiki, Kumagami, Miharu, Upper Moki, and Lower Moki low-relief surfaces by Koike (1969) were recognized in this study. These surfaces showing hill-like landform were covered by a pyroclastic flow deposits accompanying welded tuff preserved at the top of surfaces. In these low-relief surfaces, the pyroclastic flow deposits directly cover the fluvial sediments unconformably overlying granite of basement rock. Occasionally the pyroclastic flow deposits overlies the slope of granite of basement rock. Welded tuff in the pyroclastic flow deposits collected on the Kumagami low-relief surface is dated at  $4.82 \pm 0.12$  Ma and  $4.86 \pm 0.12$  Ma by K-Ar dating method. The pyroclastic flow deposits were identified as Shiarakawa Pyroclastic Flow Deposits by previous studies, however these radiometric ages show that the the pyroclastic flow deposits are not correlated with Shiarakawa Pyroclastic Flow Deposits. It is concluded that the flights of low-relief surfaces covered by pyroclastic flow deposits dated at 5 Ma had been formed by early Pliocene. The summit level of each low-relief surface is coincident with the basal level of the pyroclastic flow deposits, which indicating low rate of erosion at the strongly weathered granite of basement rock.