Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

HQR23-P01 Room:Convention Hall Time:May 24 16:15-17:30

Geomorphological evolution of Furenko barrier system controlled by scismotectonics

Kiyoyuki Shigeno[1*], Futoshi Nanayama[2], Kazuaki Watanabe[2], Hideki Yoshikawa[2], Yasuo Ikeda[3], Kenji Aoyama[3], Ryo Fujioka[3], Tomoyuki Kobayashi[3], Chihiro Sakai[3], Takeshi Hasegawa[4], Kazuto Ishiwata[5], Yasuhito Uchida[6]

[1]Ibaraki Univ., Meiji Consultant Co., Ltd, [2]Geological Survey of Japan, AIST, [3]Hokkaido University of Education at Kushiro, [4]Ibaraki University, [5]Betsukai Town Local Museum, [6]Geological Survey of Hokkaido

In general, there is no clear barrier system around Japan because it is currently marine regression or stable stage due to hydro-isostasy effect since 5000-6000 years BP. However, there are a few barrier (island) systems in eastern Hokkaido. We have been investigating Hashirikotan barrier spits in the northern part of Furenko barrier system facing the Sea of Okhotsk because five branch of spits (BR1-BR5) are clearly observed. According to our results, the Furenko barrier system has been established since 5.5 ka, and there were two lagoon-expanding stages at 5.2 and 4.0 ka estimated by volcanic ashes from Mashu volcano. On the other hand, the youngest BR1 has occurred after the 17th centuries and BR2 was caused by the last seismic up-rifting in the 17th centuries because it is covered with historical volcanic ash layers from Tarumai and Komagatake volcanoes. BR3 and BR4 were undated clearly, but BR3 was assumed the seismic rifted barrier in the 12-13th centuries, also BR4 was caused in the 9th centuries. These two barriers associated with large sand dune just after emerged each time. Since 2003, it was clearly giant earthquakes (Mw8.5) have been occurred at an interval of 500 years along the southern Kuril subduction zone. Especially coastal area raised almost 1 or 2m just after the great earthquakes. But conversely it has been settling at a rate 8.5mm / year after the last great earthquake until now. We believe the Furenko barrier system has been strongly controlled by the seismotectonics in this region.

Keywords: geomorphological evolution, Furenko barrier system, scismotectonics, outhern Kuril trench, eastern Hokkaido