

## Crustal growth of the Korean Peninsula inferred from detrital zircon U-Pb geochronology

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U-Pb analysis of 700 detrital zircon grains from major river-mouth sediments in South Korea was carried out using a LA-ICP-MS to infer the crustal growth history of the Korean Peninsula and to understand tectonics of East Asia.

The Korean Peninsula, located at the East Asian continental margin, mainly comprises three Precambrian massifs and two metamorphic belts in between them. These two metamorphic belts have been suspected as the eastern extension of the collision between the North and South China blocks which has started in the Early Triassic, although it is still controversial. Various scenarios have been suggested for decades and the tectonic affinity of the Gyeonggi massif, located in the middle among three Precambrian massifs, is under debate.

We obtained 518 concordant (discordance < 15%) zircon ages ranging from ca. 3566 Ma to ca. 48 Ma. Mesozoic (249 – 79 Ma) and Paleoproterozoic (2491 – 1691 Ma) aged zircons are predominant regardless of river-mouth location. As the zircon ages reflect current exposed distribution of crystalline rocks in their drainage areas, this suggests that the crustal growth of South Korea mainly occurred during these time periods. Comparison of these results with the previous study by Wu *et al.* [1], which analyzed detrital zircon ages of North Korean river-mouth sediments, reveals that the pre-Mesozoic crustal growth history of three Precambrian massifs in the Korean Peninsula is identical while Mesozoic magmatism prevailed in its southern part only. Therefore, the eastward extension of the Chinese collision belt into the Korean Peninsula seems questionable.

[1] Wu *et al.* (2007) *Precambrian Research* **159**, 155-177.