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**CONSTRAINTS ON SEDIMENTARY PROVENANCE IN THE SUNDA-ASRI,
NORTHWEST JAVA BASINS AND THE CILETUH REGION:
EVIDENCE FROM ZIRCON FISSION TRACK (FT) ANALYSIS**

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ABSTRACT

Zircon FT data have been obtained from basement beneath the modern forearc basin in Ciletuh region of SW Java, the low grade metamorphic to granitic basement rocks beneath NW Java Basin, and succession sediments variously from Eocene through Pleistocene age in SW Java, NW Java, and Sunda-Asri basins.

The mixture modelling of assuming two-age components shows younger component with small error and older components with large errors in age. The rock unit with the young and old age components are namely: the melange of SW Java and basement of NW Java Basin between 98.2 ± 4.1 Ma to 109.7 ± 5.0 Ma and 191.6 ± 10.9 Ma to 210.2 ± 27.4 Ma; the Eocene-Oligocene sediments (Ciletuh, G. Walat, and Jatibarang Formations) between 61.2 ± 2.6 Ma to 74.8 ± 2.2 Ma and 128.4 ± 6.1 Ma to 160.4 ± 10.4 Ma; the early Oligocene sediments (Talang Akar Formation) in the Sunda-Asri Basins between 73.4 ± 1.5 Ma to 135.7 ± 2.8 Ma, it changes towards NW Java Basin to 30.0 ± 3.3 Ma and 118.2 ± 4.9 Ma; the age components of early Miocene sediments (Gumai and Baturaja Formations) in the Sunda-Asri Basins

between 25.1 ± 4.0 Ma and 106.2 ± 3.8 Ma, the NW Java Basin between 26.4 ± 1.0 Ma and 110.9 ± 3.0 Ma; the mid-late Miocene sediments in the Sunda-Asri and NW Java Basins 20.1 ± 1.3 Ma to 39.6 ± 3.8 Ma and 97.4 ± 2.5 Ma to 111.7 ± 6.8 Ma; finally the Pliocene rock unit (Cisubuh Formation) with age component 21.8 ± 2.2 Ma and 112.4 ± 4.2 Ma.

All of the rock in the study area contain strong late Cretaceous signals. This signal becomes younger to Paleocene age for the Eocene-Oligocene sedimentary rock units which indicates substantial continuous uplift and erosion in the source rock area to bring grains with less age to surface. By early Miocene, however, the Paleocene-late Cretaceous signal in the Sunda-Asri and NW Java basins disappeared and replaced by early Miocene age component. In addition, the late Cretaceous age component was getting older. The young age component indicates the commencement modern subduction zone that followed by an early volcanic activity in the West Java region. The Triassic-early Jurassic age signals of the basement/melange and the Eocene-Oligocene sediments indicates a supply from further more central parts of the Seribu Platform, Sumatera, and possibly Malaya Peninsula. Such age component is not evident in Miocene sediments, possibly reflecting a more local origin of sediments at that time.

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