PRIMORSKY RIFT SHOULDER UPLIFT AND MIGRATION OF LAKE BAILAL OUTLET: EFFECTS OF RIFTING ON SURFACE PROCESSES

D. Delvaux (1), R. Hus (1,2), J. Poort (1,2)
(1) Royal Museum for Central Africa, Tervuren, Belgium, (2) RCMG University of Gent, Belgium. ddelvaux@africamuseum.be

The Primorsky range developed along the northwestern side of the Lake Baikal rift basin, at the margin of the Siberian Platform. Morphological investigations revealed that the outlet of Lake Baikal changed several times since the Mid-Pleistocene. Lake Baikal was previously connected to the Lena River across the Primorsky Range. Analysis of digital topography suggests that this connection migrated southwestwards along the trend of the range, as the result of more intense uplift of the northeastern part of the range, relative to the lake level. This can be due to either more rapid vertical movements or an earlier initiation of vertical movements. These vertical movements are controlled by the Late Quaternary development of the Baikal rift basin, and also reflect the diachronous long-term evolution of the individual sub-basins. In particular, the uplift of the Primorsky Range is accommodated by the activity of the border faults of the rift basins. The linking modes of the different fault segments also played a major role in the development of the sub-basins in Central Baikal. Recent surface deformation affected also the more internal part of the Siberian Plate, controlling its morphology. A belt of shallow active sedimentary basins formed along the external flank of the Primorsky Range. The more internal part of the Siberian platform was deformed in a large domal uplift (the Lena Dome), with its summits lying 1000 m above the basal altitude of the platform. Formation of the Lena Dome might have had a major role in the development of the Kovykta gas field.