



## **Numerical modelling of the evolution of Baikal Rift Zone**

Yuriy Elesin, Irina Artemieva, and Hans Thybo

University of Copenhagen, Department of Geography and Geology, Geology Section, Denmark (ye@geo.ku.dk)

We perform high-resolution 2D finite difference modeling of Baikal rift formation in order to find the range of parameters that are crucial in defining its current structure and depth. We assume that the passive rifting hypothesis is applicable to the rift formation. The study investigate the relative role of the pre-existing faults and their strength as well as strength of the faults in Sayan-Baikal fold range, intensity of sedimentation processes, rheology of the crust, Moho temperature and fault position relative to the transition zone. We find that the pre-existing faults and their strength are the main parameters responsible for the asymmetric graben structure of the Baikal rift. High sedimentation rates relative to the extension speed are required to make such deep basin. We also find that the faults in Sayan-Baikal fold range should be sufficiently strong to avoid significant faulting in that area.