



## **Time and space evolution of the transport properties of sediments as a result of their compaction during basin formation**

V. Cherniavski (1) and E. Suetnova (2)

(1) Institute of Mechanics, M.V.Lomonosov Moscow State University, Moscow, Russian Federation (vcherniavski@gmail.com), (2) Inst. Earth Phys. RAS. Moscow, Russia

Porosity reduction and fluid pressure development resulting from the compaction of sediments during its accumulation and burying depends on fluid transport properties of sediments. But on the other hand, permeability of sediments depends on its porosity. Our numerical modeling of the sediment compaction process shows the evolution of the permeability in time and space. Calculations show that the rate of permeability reduction depends on the rheological property of sediments, that is, of the sediment viscosity and pore compressibility. Based on the model calculations, the effect of variations of the physical properties of the sediments on the evolution of the sediment permeability, porosity and pore pressure accompanying the compaction of the sediments was examined.