



## **The tectonic evolution of the Taimyr fold-thrust belt: history of studies and modern ideas.**

Dmitry Zastrozhnov (1,2), Andrei Khudoley (3), and Vladimir Verzhbitsky (4)

(1) University of Oslo, CEED (zastrozhe@gmail.com), (2) A.P.Karpinsky Russian Geological Research Institute, Saint-Petersburg, Russian Federation, (3) Saint-Petersburg State University, Faculty of Geology, (4) Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russian Federation

The first tectonic studies of the Taimyr fold-thrust belt started in mid-XX century. Urvantsev (1931, 1949) recognized arched shape of Taimyr structures and interpreted that as a result of south-directed thrusting of old rock units on the Siberian Platform margin. Vakar et al. (1958) identified late Proterozoic, Caledonian and Hercynian orogeny with the consistent growth of the fold system from north to south. At the same time Pogrebitskiy (1963, 1971) found significant difference between structures of pre-Cambrian Kara block and its Paleozoic and upper Riphean-Vendian framing, and pointed that lower-middle Paleozoic sediments had Siberian provenance. In his interpretation, Taimyr fold-thrust belt was formed during Carboniferous-Triassic orogeny. Vernikovskiy (1996, 2009) linked formation of the Taimyr fold-thrust belt with the late Paleozoic - Triassic collision of the Siberian Continent and the Kara microcontinent associated with a set metamorphic and magmatic events. Currently his ideas are widely acknowledged by many geologists (Inger et al., 1999; Torsvik&Andersen, 2002; Proskurnin et al., 2009, 2010; Zhang et al., 2013).

However, Zonenshain et al. (1990) argued for a strong Mesozoic tectonic event. According to them, the Kara block and the Central Taimyr collided and connected in late Paleozoic and then there was a consolidated block isolated from the South Taimyr. Subsequently, this block (Kara massif, by Zonenshain et al., 1990) collided with the Siberian passive margin (the South Taimyr zone) at Jurassic-Cretaceous boundary. Inger et al. (1999) in their paper also leave open the possibility for such scenario.

Our structural studies of the Central and Southern Taimyr done in 2005-2012 also point to important role of the Mesozoic tectonics. In summary, our observations do not show evidence for a strong late Paleozoic compression in the Central and Southern Taimyr. Similarity in fold geometry and stress axes orientation shows that Vendian and younger rocks up to Permian in the Central Taimyr as well as Permian and Mesozoic rocks of the Southern Taimyr were mainly deformed during Mesozoic (Early and/or Late Cretaceous) compressional event, also recognized by brittle fractures in the Riphean rock units. As it mentioned above these events are approximately synchronous to major collisional processes occurred in latest Jurassic – Cretaceous time in the northeast Asia and may reflect a connection between Southern Taimyr and Mesozoic fold belts of the northeast Asia.