



Vertical plate motions in the West Siberian Basin

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The West Siberian Basin is one of the world's largest sedimentary basins representing an important source of oil and gas. The Basin's history includes long periods of very slow subsidence coupled with periods of erosion and uplift. Despite that the Basin has been broadly explored the causes of these vertical motions are not yet understood. In this study we analyse the vertical motions by the means of backstripping. The new backstripping results refined by the paleo-water depth data give estimates of the subsidence and uplift rate. These results show a peculiar character of the vertical motions where the region of maximum subsidence migrated from the north to the south several times during the Basin's history. Such southward propagation of subsidence happened in the Late Jurassic, Aptian and in the Paleogene periods. The newly constrained local eustatic curve indicates that the Basin's vertical motions do not reflect the global sea level changes, but the more complicated tectonic processes.

We put different data sets of the Basin's sediments and crust structure together with the new backstripping results in order to understand better the vertical motions and the processes underlying the irregular subsidence and uplift pattern of the West Siberian Basin