GEODYNAMIC CONDITIONS OF OIL/GAS-BEARING SEDIMENTARY BASINS IN TRANSITIONAL ZONES OF THE NORTHWESTERN PACIFIC BELT

1BURLIN,Yu.K. AND 2KHARAKHINOV,V.V. 1Lomonosov Moscow State University 2Institute of Lithosphere of Marginal and Inner Seas, Russian Academy of Sciences

The alteration of compressional (transpression) and tensional (transtension) geodynamic regimes is the reason of oil and gas presence in basins of transitional zones of active continental margins. This alteration determines compaction and decompaction of rocks masses and pressing out of fluids sidewise as well as upward. Large accretionary prisms are generated along listric faults growing from different levels of the Lithosphere and the Crust. The pulsating alternation of compression and tension is correlative with energy accumulation and release. The unequal energy and substance flows distribution determine fluids concentration in undercompaction zones. These zones occur in sedimentary basins at levels where tectonic regime and geodynamic stress were variable. The energy level in the rocks system increases during compressional period, and rocks acquire a stressed unstable state. The tensional regime relaxes the rocks, and fluids movement starts. This pumping effect is favourable for hydrocarbons migration and accumulation. Linear zones of higher and lower fluids (i.e. hydrocarbons) conductivity are distinguished in the transitional zones. They are known along East Sakhalin, offshore South Alaska, in the northwestern part of the Bering Sea and in other marginal seas. The sedimentary basins and associated accretionary prisms in these zones have great resources of hydrocarbons. They are proven on the Sakhalin and the Philippine shelves and in other places.