

Metallogeny of Mesozoic and Cenozoic Uraniferous Sedimentary Basins in Central and northern Eurasian Continent

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Uraniferous sedimentary basins, confined to the intermountain depressions and depression structures in the cover of platforms of the Eurasian continent, are controlling the sandstone-type uranium deposits. They have a zonal distribution pattern and are localized within three belts. Within the collisional belt, uraniumiferous sedimentary basins of tectono-sedimentary type are traceable latitudinally with breaks for 10,000 km. Small, medium and large uranium deposits of sandstone type are localized in these basins.

The transitional (suborogenic) belt, characterized by a cluster occurrence of the uraniumiferous sedimentary basins, is confined to the median masses (Czech, Central French etc.) and activated areas of young platforms with active hydrodynamics in the near-orogen artesian basins (Central Kyzylkum, Chu-Sarysu etc.). Medium, large and unique (in terms of reserves) roll-type uranium deposits are localized here. Structural features of the above belts predetermine the diversity of relations between ore systems in the sedimentary basins – stadial (hydrocarbons), exfiltrational (Pb, Zn etc.) and infiltrational (U, Se, Mo) within ore fields and the shows of the thermal processes at certain uranium deposits.

The northern uraniumiferous belt is characterized by the structural rock sedimentary basins in which small, medium and, less frequently large uranium deposits of basal and intraformational type are localized. In the eastern Eurasian continent, the above zonation is distributed, and the uraniumiferous OB are recorded both in the collisional and orogenic areas, often being spatially related to the aureoles of Cenozoic volcanism reflecting the areas with the hot plume shows in the zone of oceanic plates subduction under the continent.