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*DIVERSITY OF LOESS: PROPERTIES, STRATIGRAPHY, ORIGIN
AND REGIONAL FEATURES*

ABSTRACTS OF THE INTERNATIONAL CONFERENCE



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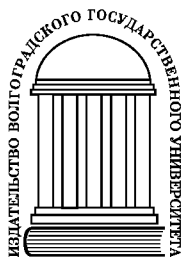
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The book of abstracts of International conference “LoessFest 2018. Diversity of loess: properties, stratigraphy, origin and regional features”. The conference topics include all aspects of modern loess research – the most important archive of continental sedimentation: geochronology of loess/paleosol sequences and dust MAR; loess/paleosol stratigraphy; environmental evolution based on the study of paleosols; land-surface process and engineering geology of loess regions, loess in cryo-environment and loess sedimentation around Caspian Sea.

Сборник докладов Международной конференции «LoessFest 2018. Разнообразие лёсса: свойства, стратиграфия, происхождение и региональные особенности». Темы конференции охватывают все аспекты современных исследований лёссовых пород как важнейшего архива процессов континентальной седиментации: геохронология лёссово-палеозольных последовательностей и пыли MAR; стратиграфия лёсса / палеозоля; эволюция окружающей среды, основанная на изучении палеозолей; наземная обработка и инженерная геология лёссовых районов, лёсс в крио-среде и лёссовая седиментация в районе Каспийского моря.

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fertility, small river degradation, reservoir siltation and water quality deterioration is not commonly taken into account for soil erosion mapping and designing soil- and water-conservation measures. The present project is concentrated on establishing and evaluating relationships between different types of RCF and morphological and geochemical differentiation of soils, intensity and spatial distribution of soil erosion and deposition processes on cultivated slopes. The approaches employed include analysis of the RS data, application of several independent techniques for quantitative assessment of soil redistribution on cultivated slopes and in small catchments, high-quality geodetic and airborne photo (by unmanned aerial vehicles) surveys, morphological and geochemical investigation of soil properties and georadar surveys.

First investigations of several locations within the Srednerusskaya Upland have shown that the territory is characterized by widespread presence of RCF on interfluvies and gentle upper parts of their slopes. Morphologically these are represented mainly by polygonal and linear features, sometimes with distinctive transition zones. At certain locations, individual features with more rounded planform probably representing relics of thermoclast depressions are also present. These features exert important influence on spatial pattern of overland flow, especially runoff concentration, and, therefore, on sediment redistribution within cultivated hillslopes. In addition, modern gully network partly inherits lower sections of the RCF polygonal or linear networks, although being much shorter and less dense than the networks reconstructed for the permafrost features degradation period in the end of the Late Pleistocene.

The research was supported by the Russian Foundation for Basic Research Project No. 18-05-01118 "Relic cryogenic topography as a factor of soil degradation on agricultural lands of the Western European Russia".

MORPHOMETRIC ANALYSIS OF RIVER VALLEYS IN LOESS-LIKE SEDIMENTS REGIONS

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Loess-like rocks are one of the types of loess formations or rocks. Compositionally these rocks differ from loess by the presence of stratification; they have more clayey or sandier structure. The left-bank of the Tsimlyansk basin is a good example of the territory with developed loess-like sediments where the surfaces of watersheds and slopes form the cover loess-like loams of the lower and upper sections of the Quaternary system. Let's describe the features of the river valleys of the rivers Don Tsaritsa, Myshkovskii Erik, Myshkova, flowing into the

northern part of the basinbays. Morphometric characteristics of the river valleys were obtained by analyzing the digital relief model SRTM 1-arc-second.

The Don Tsaritsa. In the upstream flow, the river valley width is 2-3 km, the erosion cut exceeds 50 m, and the asymmetry of the slopes is not significant. In the midstream, the river makes a turn by 90°, the valley width reaches 10 km, and the erosion cut is within 50 m. The asymmetry of the slopes increases: the left is gentler, here the II terrace above flood-plain area is increasing, but it is absent on the right side of the valley. In the downstream, the valley width is about 7,5 km, the depth of the cut-off is 40 m.

MyshkovskyYerik. The flow is directed submeridianally. In the upstream, the erosion cut is about 50 m, the sediments of the above-floodplain terraces are blurred and Paleogene (Pg¹₂zr) and Neogene (Ner) sediments are opened. The slopes are asymmetrical, the left is steeper. In the downstream, the erosion cut is reduced to 30 m, and the slopes asymmetry becomes insignificant.

Myshkova. In the upstream, the erosion cut exceeds 40 m. The left side of the valley is covered with sediments of III and II above-flood terrace without a subdivision, as well as the first terrace above the floodplain. On the right side, the Ergenen suite rocks of the Neogenehave been opened. Asymmetry of the slopes is insignificant. In the midstream, the asymmetry of the slopes becomes clear, the left slope is flat, and the right slope is steep. This can be explained by the fact that on the left side of the valley the deposits of the above-floodplain terraces have been preserved, while on the right the Paleogene and Neogene rocks have been openedby erosion. The valley width is more than 5 km. In the downstream, the slope asymmetry is preserved, the valley width increases and exceeds 6 km, the erosion cut is more than 30 m.

From the above, we can conclude that in the described river valleys, there are deposits of three above-floodplain terraces mainly on the left slope. Beginning with the upstream and up to the midstream of the rivers, it is identified the erosion of Quaternary alluvial sediments on the right slopes of the valleys and the opening of older rocks, in this case Paleogene and Neogene.

QUANTITATIVE ASSESSMENTS OF THE EFFECT OF CRYOGENESIS ON THE FORMATION OF LOESS

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Keywords: permafrost, cryolithology, coefficient cryogenic contrast, coefficient of heavy mineral.

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CASPIAN SEA QUATERNARY STRATIGRAPHY AND PALAEOGEOGRAPHY

**Butuzova E., Kurbanov R., Yanina T., Murray A., Makeev A.,
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