Soil response to sub centennial climate change

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The most inertial object of the climate system is the lithosphere, including soil. To study the impact of modern climate change on agricultural soils, which are currently under wild cenoses, a special technique is being developed. For its development, the vast territory of the Yaroslavl Volga region was selected, for which we have data on the morphological and genetic properties of agricultural soils for more than 40 years. In order to obtain a climate-dependent response of soils to the current scale of global warming, data on the evolution of soils, parent rocks, vegetation, and also the intensity of anthropogenic impact are used. The methodology is based on a comparison of the climatic component for two periods - 1961-1990 and 1991-2018. The analysis of the variability of air temperature, precipitation, temperature totals of more than 10 ˚C and agroclimatic indices for these periods. A joint analysis of changes in soil properties and climatic indicators will allow us to evaluate the speed of soil processes and soil fertility and become the basis for modeling soil climate for the future.

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