# Global biota's and climate's dynamics model development using satellite data

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Does the biota of the Earth influence the climate variations or not? Today there does not exist coherent opinion about this. Different investigations often bring opposite results. It happens due to unsatisfactory understanding of how global processes function, and the absence of precise quantitative information on the key variables: biomass, surface temperature, soil moisture, etc.

There are many studies, where the correlation of vegetal indices with the climate changes is described. So there are separate models investigating global and regional climatic changes. Our investigation combines mathematical modelling with remote sensing data. Information, derived from remote sensing data, is used for the developing and verification of minimal mathematical model of global biota's and climate's dynamics.

Developed minimal model is designed for the prediction of the permissible limits of anthropogenic influence and studying principles of biosphere-climate interaction. In the model calculations vegetation indices derived from the images of terrestrial and aqueous surface (NOAA and MODIS) were used. The studies include the development of the procedure of coupling satellite data with the global biospheric processes dynamics. The studies are based on the data on seasonal changes in the atmospheric concentration of carbon dioxide and the primary production of photosynthesis of ground-based and oceanic compartments. The model ability linking satellite data to the earth's and ocean's surface processes investigation is demonstrated.