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CONTROL ID: 1493393**TITLE:** Web-GIS platform for monitoring and forecasting of regional climate and ecological changes

ABSTRACT BODY: Growing volume of environmental data from sensors and model outputs makes development of based on modern information-telecommunication technologies software infrastructure for information support of integrated scientific researches in the field of Earth sciences urgent and important task (Gordov et al, 2012, van der Wel, 2005). It should be considered that original heterogeneity of datasets obtained from different sources and institutions not only hampers interchange of data and analysis results but also complicates their intercomparison leading to a decrease in reliability of analysis results. However, modern geophysical data processing techniques allow combining of different technological solutions for organizing such information resources.

Nowadays it becomes a generally accepted opinion that information-computational infrastructure should rely on a potential of combined usage of web- and GIS-technologies for creating applied information-computational web-systems (Titov et al, 2009, Gordov et al. 2010, Gordov, Okladnikov and Titov, 2011). Using these approaches for development of internet-accessible thematic information-computational systems, and arranging of data and knowledge interchange between them is a very promising way of creation of distributed information-computation environment for supporting of multidiscipline regional and global research in the field of Earth sciences including analysis of climate changes and their impact on spatial-temporal vegetation distribution and state.

Experimental software and hardware platform providing operation of a web-oriented production and research center for regional climate change investigations which combines modern web 2.0 approach, GIS-functionality and capabilities of running climate and meteorological models, large geophysical datasets processing, visualization, joint software development by distributed research groups, scientific analysis and organization of students and post-graduate students education is presented.

Platform software developed (Shulgina et al, 2012, Okladnikov et al, 2012) includes dedicated modules for numerical processing of regional and global modeling results for consequent analysis and visualization. Also data preprocessing, run and visualization of modeling results of models WRF and «Planet Simulator» integrated into the platform is provided. All functions of the center are accessible by a user through a web-portal using common graphical web-browser in the form of an interactive graphical user interface which provides, particularly, capabilities of visualization of processing results, selection of geographical region of interest (pan and zoom) and data layers manipulation (order, enable/disable, features extraction).

Platform developed provides users with capabilities of heterogeneous geophysical data analysis, including high-resolution data, and discovering of tendencies in climatic and ecosystem changes in the framework of different multidisciplinary researches (Shulgina et al, 2011). Using it even unskilled user without specific knowledge can perform computational processing and visualization of large meteorological, climatological and satellite monitoring datasets through unified graphical web-interface.

CURRENT SECTION/FOCUS GROUP: Global Environmental Change**CURRENT SESSION:** GC019. Environmental, Socio-economic and Climatic Change in Northern Eurasia and Their Feedbacks to the Global Earth System**INDEX TERMS:** [1699] GLOBAL CHANGE / General or miscellaneous, [1908] INFORMATICS / Cyberinfrastructure, [1930] INFORMATICS / Data and information governance.**AUTHORS/INSTITUTIONS:** E.P. Gordov, I. Okladnikov, A.G. Titov, T.M. Shulgina, , SCERT/IMCES SB RAS,

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