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## On Space Weather factors which can impact terrestrial physical and biological processes

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The main idea of our work is to find out the perspective points for the investigation of space factors which can impact physical and biological processes on Earth surface. Some decades ago the complex of those factors was named as "Space Weather". So the main purpose of our work is to discover the connection between Space Weather and Terrestrial Weather as well as the impact of this environmental complex (Space Weather plus Terrestrial Weather) on biological objects and thereby on the human health.

The first part of the presented work contains the description of the Space Weather characteristics for the appearance moments of very long-live (more than 10 days) atmosphere pressure systems on different terrestrial latitude locations. These Long-live Pressure Systems (LPS) are interesting for us because some of them (namely anticyclones) can block pressure fields so they can create some dangerous situations for the human health as well as for the human activity. The different terrestrial latitude locations were: (1) Saint-Petersburg (59°57'N, 30°19'E) and (2) Tambov (52°43'N, 41°27'E). This latitude difference in observations is interesting for us because we know about the different affect of Space Weather variations on northern and southern places so we want to study this difference. The time-intervals were: (1) 1999-2014 years (Saint-Petersburg), (2) 2007-2014 years (Tambov). Space Weather parameters were: (1) global variations of Solar Activity (SA) parameters; (2) daily characteristics of the SA flare component in various bands of the electromagnetic spectrum; (3) variations of Interplanetary Space characteristics in Earth vicinity; (4) variations of daily statistics of Geomagnetic Field (GMF) characteristics. For the appearance moments of LPS we have discovered the interesting behaviour for follow Space Weather characteristics: variations of all global SA indices, variations of low energy (C-class) X-ray solar flares number, variations of proton fluxes, and variations of GMF parameters daily statistics. Also we have discovered the terrestrial-latitude difference in the atmosphere response on the Space Weather impact.

The second part of our work contains the results of investigation of environmental (Space Weather plus Terrestrial Weather) impact on human health. This study was done for Saint-Petersburg region (the northern place from the previous point of our investigation). The human health status was indicated by: (1) Cardiac Rhythm Variations (CRV) of patients in the clinic of Medicine Academy, Sudden Cardiac Deaths (SCD) in Research Institute of Emergency Medicine, facts of hard situation

in 6 local clinics in different places of Saint-Petersburg and its suburb. We have found out that the dramatic cardiac events (CRV extrema, SCD maxima, hard days in clinics) are connected with variations of solar radio bursts number (the burst type is "noise storm"), the spread daily statistics (coefficient of variation) of GMF z-component and with spread daily statistics (coefficient of oscillation) of air temperature.

Results of our work may be used as the base for the hazard environmental monitoring.