



## **Space weather and human health at the Earth's surface: results of Azerbaijani studies**

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There are collaborative and cross-disciplinary space weather studies in the Azerbaijan National Academy of Sciences conducted on revealing possible effects of solar, geomagnetic and cosmic ray variability on certain biological and ecological systems. Some results of the experimental studies of influence of the periodical and aperiodical changes of space weather upon human brain, health and psycho-emotional state, sudden cardiac death mortality and influenza epidemics are described in this review paper. Investigations also included the study of an influence of violent solar events and severe geomagnetic storms on the mentioned systems in mid-latitude locations. It is experimentally established that weak and moderate geomagnetic storms do not cause significant changes in the brain's bioelectrical activity and exert only stimulating influence while severe disturbances of geomagnetic conditions having negative influence, seriously disintegrate brain's functionality, activate braking processes and amplify the negative emotional background of person. It is concluded that geomagnetic disturbances affect mainly the emotional and vegetative sphere of human beings while characteristics reflecting personality properties do not undergo significant changes. It is revealed that number of sudden cardiac deaths displays certain space weather related periodicities and is inversely dependent on changes in solar-geomagnetic activities and directly proportional to changes in cosmic ray activities. Studies show that influenza epidemic usually begins 2-3 years before and / or 2-3 years after the 11-years sunspot cycle maximum. It is assumed that solar activity affects the influenza epidemic mainly through geomagnetic activity.