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Is climate change altering the living conditions of Hñã-hñö ethnic community in the Sierra Otomí (Mexico)? Or are they just meteorological variations?

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Climatic conditions become ostensible in human activities altering agricultural production, forestry and civil security increasing vulnerability risk of socio-environmental disaster. In regions where natural resources proliferate in good condition and therefore are declared protected areas, such as the Sierra Otomí in the municipality of Amealco (Queretaro, Mexico) it is essential to determine whether there is indeed climate changes or, if there are just weather variations analyzing meteorological data from different climatic stations around the community. This ethnic group depends 100% of its natural resources for its survival today. The aim of this study was to identify if weather variations are so persistent in the time to talk about climate change in the region. Trend, its impact on the daily lives of Hñã-hñö and their perception of climate change will be quantified. For this purpose, were revised precipitation and temperature data from five closest to the study area weather stations, but a detailed analysis focused exclusively on the station with the longest series was done (Amealco, spanning more than 60 years data). Temperature analysis showed that between 1944 and 2011 has dropped 0.5°C (trend line starts at 23.2°C and ends at 22.7°C). Precipitation has no statistical differences between these 67 yrs. Regarding the perception of the population they believe there is a major climate change in the region, increasing trouble scheduling crops because the rain is delayed or comes suddenly and everything floods. It also tells people that the temperature is getting stronger than ever, because the nights are cooler and the days are hotter than some years ago. This information will serve to propose concrete measures for the management of their resources.

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Age features of blood sensitivity to the changing heliogeophysical environment

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The purpose of the research was to study the age features of rheological and hemostatic blood properties dependence on the influence of cosmic and heliogeophysical factors (solar, geomagnetic activity, high-energy particle fluxes of solar and cosmic origin) in 220 patients with hypertension, aged 30-69 years. The analysis included the following hemostatic and hemorheological parameters: clotting time, duration of bleeding, prothrombin index, ADP-induced platelet aggregation, blood viscosity. The study was conducted under background conditions and under conditions of the modeled weakening of the geomagnetic field. When analyzing the influence of heliogeophysical factors on hemostatic and rheological parameters in the background conditions the greatest number of significant correlations, indicating to the increased blood clotting at the increase in solar activity, as well as to the association of hemostatic processes with the intensity of solar protons and electrons was observed in the age groups 50-59 years and 60-69 years. The most pronounced reaction with a decrease in blood viscosity and weakening of its dependence on the solar activity at short-term incubation of blood samples in hypo geomagnetic installation were identified in the older age group (60-69 years). In general, strengthening of rheological and hemostatic blood properties dependence on heliogeophysical factors with increasing age was revealed. The role of changing human sensitivity to solar and geomagnetic activity in the conditions of the annual weakening of the magnetic field in the process of premature aging is under discussion.

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