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## 優勝作品專輯

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**The Main Features Of Climate Change On The  
South-West Of Yakutia In The Last 100 Years**

### 得獎獎項

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## Abstract

**1. Purpose of the research** to detect the dynamics of the change of moisture regime on the territories of Olekminsk area for the past 100 years.

**2. Procedures** for analysis we used as materials of observations on the testing areas of school of ecological control of our Center, so and of the meteorological station Jikimda situated on the territories of Olekminsk reserve, as literary sources. Time-series analysis was conducted as to following scheme: for period 1901 -1914, 1949-1958 and for period 1996 -2009.

**3. Data** The changes of the temperature of air and sediments for the period of instrumental observations from 1901 to 2009 were analyzed

**4. Conclusions** Climate is characterized with many parameters coming in radiation, the heat and aqueous balances of territory. The most simple and widely measured parameters are the temperature of air and the quantity of atmospheric condensation. Carried out researches and the analysis of received results let us make tentative conclusions:

1. Average amount of precipitation increased on 41% (with 229 mm during the period 1901-1914 till 390 mm for period 1998 - 2006)

2. The decrease of firm precipitation in cold period and increasing of fluid precipitation in warm period are noticed for 100 years.

3. The gross amount of days with precipitation grows from 135 days (period 1901 - 1914) till 160 days (for period 1996 - 2006). For period 1901 -1914 a month with the greatest quantity of days with precipitation is January. The middle quantity of days with

precipitation in it composes 16 days. A month with the least quantity of days with precipitation is July. The middle quantity of days with precipitation in it composes 8 days for period 1996 -2006. We should note that though increasing of the quantity of days with precipitation is on the cold period of year, increasing of the value of precipitation arises at expense of warm months. This reflects well the annual motion of the force of precipitation as to studied periods, the force of precipitation grows, in the first case achieving maximum in August, into second - in July. The maximal significances of the force of the precipitation of second period exceed of such the first period almost in two times.

4. The disposition of meteorological phenomena shows the change of climate to moistness. There are more days with fog, snow-storm, the quantity of days with precipitation increases from more 1mm, so more and 5 mm and it's noticed that the quantity of days at a speed of wind more 10 and 15m/sec increases.

5. The change of the precipitation amount, especially in warm period affects the level and the expense of water in the Lena River. Analyzing as to decades the statistics on stratum of flow as to stratum flow since 1930 till 2006 can be noted tendency increasing of stratum flow from 132.8 mm in 1930 till 289 mm in 2006. The significance of the annualized expense of water with 6370 in 1999 till 8710 m/sec in 2006 enlarge, the annualized level of water changes from 282 till 376 cm. It is according. The area of the movement of the significances of the indicators changes to their increasing in the course of the year for the last 10 years. Averaging their significance exceed the norm of 18%.

In conclusion we want to note that global change of climate actually touches all of us and already has significant influence on natural environment and the life of people. In simple words warming - the increase of temperature - for the many areas of our north

country might become a favorable change of the conditions of life. But the trouble is that the change of climate is much more complex process, and one of its main manifestations is the augmentation of the instability of climatic conditions, changes of flora and fauna, increasing of infectious diseases. This influences badly on natural ecosystems and complicates the life of people. Besides, too quick warming does not let natural ecosystems adapt themselves, and they can be destroyed. And at least now we shouldn't wait doing nothing, it is necessary to take all efforts to try to reduce climate change effect.

## 評語

本研究討論俄羅斯薩哈（雅連特）Dekminsk 過去一百年的氣溫、降水，及河流流量的變化，並探討其與全球暖化的關聯。雖然題目頗為有趣，但全球暖化的效果其實與單一地點之資料，很難建立明確的關聯，此摘要之英文尚有許多可改進之處，許多字句的表達可能不易讓人看懂，也增加了評分的困難度。另一個此類研究常見的問題，在於如何修正長期以來，因儀器或觀測位置更改所造成的誤差，此點作者均未觸及。另外，為何僅分析 1901-1914，1949-1958 及 1996-2009 等三個時段之資料，也未有足夠說明。一般而言，使用完整長度的資料，其分析結果在統計上的代表性必然較佳，資料切的越短則結果之代表性越低。