



## **Boundaries changing of Elbrus glaciers over time**

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The mountain Elbrus is located in the North Caucasus (Russia) and represents a volcano of the conic form with height of 5642 m asl from which slopes 23 glaciers flow down. Now all glaciers of Elbrus retreat. The Malyj Azau Glacier located on a southern slope of mountain Elbrus was investigated last years in connection with IAEA project INT5153. Observations of separate Elbrus glaciers has begun from the middle of XIX century, and practically all this time glaciers retreat (except for the short periods in 1920th, 1950th and 1980th when glaciers were stable or even increase a little) a little. During observations (since 1857) it was found retreat of some glaciers: Bolshoj Azau – on 2800 m, Malyj Azau – on >1000 m, Garabashi – on >1450 m. It is interesting that in modern time retreating of tongues of Elbrus glacier occur in conditions of unchanging climate in surrounding area throughout at least last 200 years. It means that retreating of glaciers on Elbrus is not connected directly with modern climate change. As the rotation of mass on Elbrus glaciers consist about 200-300 years it is clear that now tongues of glaciers receive material that was origin about 200-300 years ago. As it was time of Little Ice Age (LIA) it is possible to assume that the present glaciers retreating can be connected with conditions of snow and ice accumulation on Elbrus 200-300 years ago. It is known that during LIA there was colder and quantity of precipitation decrease. Probably it also is one of the reasons of modern glaciers retreating on Elbrus. Features of glaciers retreating on Elbrus have influence on specificity of sediments redistribution closely to glaciers. The greatest value in redistribution of sediments have rain, melt water and in last years also anthropogenous activity.