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### **Holocene lithalsa at the Sentsa River valley, Eastern Sayan**

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A lithalsa has been studied in the Sentsa River valley, Eastern Sayan, Buryatia. This is the first detailed study of permafrost in the Eastern Sayan Mountains, based on analysis of the cryostructure and distribution of stable isotopes of oxygen and hydrogen from the ice and ice-soil core of the injection-segregation-type lithalsa. Reticulate chaotic and lenticular cryostructures dominate in the core of the lithalsa. The ice content exceeds 50-60%. The vertical and lateral distribution of the stable isotopes of oxygen and hydrogen favours the cascade lithalsa formation at the first stage of an ice-soil core of a large lithalsa. An ice-soil core of a small lithalsa formed at the second stage. Nucleation and initial growth of the lithalsa occurred at the stage of shallowing of the lake. Water feeding of lithalsa is mainly due to ground water from freezing suspension, but atmospheric and lacustrine types of feeding may occur also. The growth rate of the lithalsa is usually quite high and may reach ten centimetres per year. Lithalsas 50-100 years old and more than five metres high are usual. This work was financially supported by Russian Scientific Foundation (grant RSF № 14-27-00083)