Master thesis is concerned with the subject of a snow cover dynamics (focused on snow melting) and of the detailed analysis of each physical-geographic factors effect on its character. Knowledges published in the domestic and foreign scientific literature are confronted with the data acquired within a number of expeditionary snow monitoring campaignes carried out during winter periods 2011/2012 a 2012/2013 in headwaters of rivers of Šumava (Šumava Mts., southwestern Czechia). Mobile field survey was done in a number of time horizons within the broadly conceived research in the upper Otava River basin concentrated on the assessment of the retention potential in headstream areas.