

This bachelor thesis handles issue of impact of artificial snow production on the runoff balance in mountain basins. First part of the thesis is summary of available literature about properties of artificial snow and its impact on natural sphere with regard to climate change. The second part of this thesis analyzed the change of water balance and runoff in selected basins in Krkonoše mountains. Data from monthly flows from three hydrological station – Vestřev (Labe), Horní Staré Město (Úpa), Dolní Sytová (Jizera) from 2003 to 2011 and data abstraction of water for snowmaking for the period 2001-2011 were used. The artificial snowmaking does not occure in long term to significant change in flow out, only to change their annual distribution. The impact of artificial snow production would be significant with evidence in a small basins.

**Keywords:** artificial snow, snowmaking, water balance