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## Using SWAT model to evaluate the plausible changes in a karst snow-fed watershed in the Moroccan High Atlas

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High Atlas is considered as one of the major reservoirs of freshwater for crop yield and hydropower production in the plains of central Morocco. Nevertheless, snowmelt and discharge in this region have been reported very vulnerable to climate variability, which threaten the sustainability and development of socio-economic activities in this region. Thus, there's a strong need to understand the spatio-temporal variability of water cycle in addition to the impact of the changing climate on the main hydrological components. This work focuses on the application of SWAT model in the mountainous watershed of Oued Al Abid river, which is potentially threatened by climate and anthropogenic forcings. The study is based on two main axes: (i) the implementation of SWAT to model the snowmelt discharge processes over this watershed taking into consideration the karst structure of this area, (ii) the projection of climate change has been also analyzed by forcing SWAT model using three simulations of Regional Climate Model RCA4. Results showed that SWAT model performed satisfactory to very good in reproducing discharge and reservoir inflow. According to the results, the hydrological components showed a significant variability, particularly in snowmelt, infiltration and surface runoff. Furthermore, negative variation and peak shift in the projected inflows to the dam have been demonstrated by this study.