

Accepted Manuscript

Review papers

Remote sensing, hydrological modeling and in situ observations in snow cover research: a review

Chunyu Dong

PII: S0022-1694(18)30280-4

DOI: <https://doi.org/10.1016/j.jhydrol.2018.04.027>

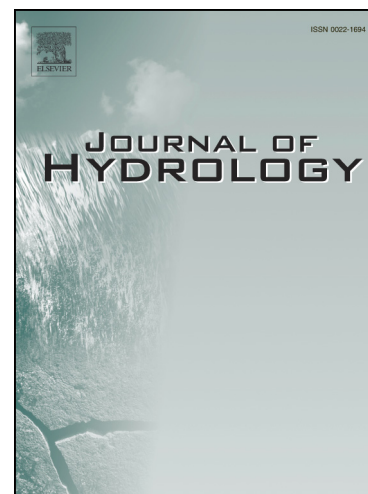
Reference: HYDROL 22730

To appear in: *Journal of Hydrology*

Received Date: 7 February 2018

Revised Date: 23 March 2018

Accepted Date: 8 April 2018



Please cite this article as: Dong, C., Remote sensing, hydrological modeling and in situ observations in snow cover research: a review, *Journal of Hydrology* (2018), doi: <https://doi.org/10.1016/j.jhydrol.2018.04.027>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Remote sensing, hydrological modeling and in situ observations in snow cover
research: a review**

Chunyu Dong

Department of Geography, Heidelberg University, Heidelberg, 69120, Germany

Institute of the Environment and Sustainability, University of California, Los Angeles, California,
90095, USA

Corresponding: Tel.: +49 6221 54-5571 dongchunyu2004@gmail.com (C. Dong)

Abstract

Snow is an important component of the hydrological cycle. As a major part of the cryosphere, snow cover also represents a valuable terrestrial water resource. In the context of climate change, the dynamics of snow cover play a crucial role in rebalancing the global energy and water budgets. Remote sensing, hydrological modeling and in situ observations are three techniques frequently utilized for snowpack investigations. However, the uncertainties caused by systematic errors, scale gaps, and complicated snow physics, among other factors, limit the usability of these three approaches in snow studies. In this paper, an overview of the advantages, limitations and recent progress of the three methods is presented, and more effective ways to estimate snow cover properties are evaluated. The possibility of improving remotely sensed snow information using ground-based observations is discussed. As a rapidly growing source of volunteered geographic information (VGI), web-based geotagged photos have great potential to provide ground truth data for remotely sensed products and hydrological models and thus contribute to

Download English Version:

<https://daneshyari.com/en/article/8894827>

Download Persian Version:

<https://daneshyari.com/article/8894827>

[Daneshyari.com](https://daneshyari.com)