

# 28/02/19 DIST LUNCH SEMINAR

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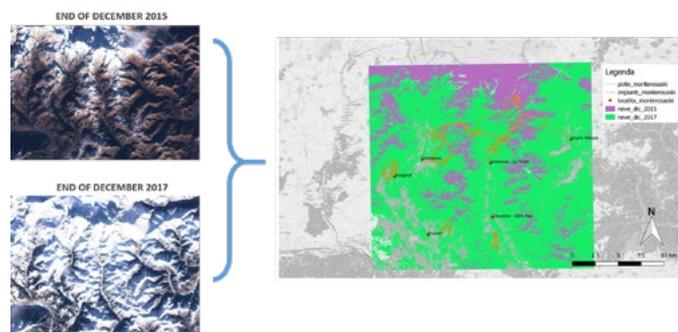
## CLIMATE CHANGE AND ADAPTATION STRATEGIES IN WINTER TOURISM: THE CASE STUDY OF THE MONTEROSA SKI AREA AND THE MUNICIPALITY OF AYAS (REGIONE AUTONOMA VALLE D'AOSTA)

### ABSTRACT

The Intergovernmental Panel on Climate Change (IPCC) is increasingly interested in the relationship between climate change and mountain environment. In fact, in the "Special Report on the Ocean and Cryosphere in a Changing Climate" (which will be published in 2019) an entire chapter is dedicated to the "High Mountain Areas", exploring in detail the variation of the snow cover and its impact on tourism.

Considering the growing interest in this field, in the present study the relationship between climate change and Monterosa ski environment has been investigated, with particular attention to skiing activities, in order to have sufficient knowledge of the state of the art of this topic. The spatial contextualization and analysis of the time series of temperature, precipitation and snow data specific for the focus area (area of Antagnod, Brusson, Champoluc, as well as Monterosa ski) has been performed using different datasets and techniques. Some of the main questions that this research aims to answer are which ski areas of Monterosa ski resort will be reliable in a context of climate change, and if ski-based tourism will still be sustainable for the valley in the future.

Therefore, remote sensing techniques to detect snow have been used. The methods are based on well-tested concepts, but the spatial and temporal resolution of snow maps is nevertheless highly innovative: the implementation of the Sentinel-2 mission (global coverage with resolution up to 10 m every 5 days) allowed to obtain new perspectives for snow cover monitoring.



**Thursday**

**28/02/2019**

**h. 13,00 - 14,00**

**Sala Vigliano - DIST  
Castello del Valentino  
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Torino**

**Confirmation by**

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Thanks to the elaboration of high-resolution satellite images, it was determined the snow cover extension periodically observed by the satellites from 2015 winter season until now, and a comparison between monthly snow cover extension on Monterosa ski area and number of ski tickets sold has been conducted. Furthermore, from existing scientific analysis, the altitude of the natural snow-reliability line has been related to future temperature and precipitation scenarios at local scale.

Finally, a possible link between the line of natural snow-reliability and sensitivity of Monterosa ski resort has been investigated in relation to the altitude.

The joint investigation of snow cover evolution with economic-tourist analysis is essential to evaluate best strategies for adapting to climate change's impacts. With regard to temperature increase, Monterosa Ski area, thanks to the high altitudinal range of its slopes, is less sensitive than other European resorts. Nevertheless, adaptation measures that take into account not only changes in temperature and availability of water resources, but also consequences in the variation of precipitation and increase of intense meteorological phenomena are necessary.

*Professor Alessandro PEZZOLI, Expert Reviewer of the Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC by IPCC), will briefly introduce the seminar.*

### BIOGRAPHY

Elena DURANDO, graduated in Environment Economics and Policies and ski instructor, she has just completed a collaboration, thanks to the "Talents of Civil Society 2017" research grant, with Fondazione Montagna Sicura to investigate the effects of climate change on winter tourism. She is particularly interested in remote sensing techniques and geographic information systems (GIS).

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