EMS Annual Meeting Abstracts
Vol. 9, EMS2012-290, 2012
12th EMS / 9th ECAC

Characterization of mean and extreme temperatures and bioclimatic indexes evolution in the last 50 years in vineyards regions of South America (Chile and Argentina)

E Briche (1), C Saulo (1), and H Quénol (2)

(1) Centro de Investigaciones del Mar y la Atmosfera (UBA/Conicet), UMI 3351 IFAECI, Departamento de Ciencas de la Atmosfera, Universitad de Buenos Aires, Buenos Aires, Argentina, elodie.briche@cima.fcen.uba.ar, saulo@cima.fcen.uba.ar, (2) UMR6554 LETG (Equipe COSTEL), Université Rennes 2, Place du recteur Henri le Moal 35043 Rennes Cedex, France. herve.quenol@uhb.fr

A global change will necessarily affect local climates of agrosystems and have implications on vineyards regions. In this context, potential impacts of climate change raise a lot of interrogations concerning impacts and adaptation. Wine growing in South America is touched by effects of temperatures changes: phenology is perturbed and production may depend on extreme events. These vineyards are particularly interesting to study because of their location around the Andes and thanks to a network of weather stations since 50 years.

This post-doctoral research is integrated in the GICC-TERADCLIM project, which searches tools and scientific techniques in order to assess current and future agro climatic potentialities of vineyards regions in particular with a better knowledge of local climate spatial variations. The aim is to establish a methodology including field (meteorological and agronomic) measurements and spatial modeling of climate adapted to fine scales in order to prevent future consequences of climate change at local scales.

To achieve this aim in vineyards of South America (Chile and Argentina), it's necessary to acquire meteorological data in the first time. Regional meteorological data of Claris-LPB in Chile and Argentina (about 20 stations) are used. Some series are longer and allow observing climate temperatures trends and evolution of bioclimatic indexes. Active mean and maximum daily temperatures (above 10˚C) are used to in heliothermal index of Huglin. This one is widely used for assessing the main overall characteristics of geographical zones as well as the local adaptation of varieties and a class of viticulture climate corresponds to a class interval of values in degree-days. Others are computed too as the Winkler Index, Cool Night Index. Evaluation of possible modifications in vineyards is necessary in terms of thermal extremes for vineyard as spring frost during budbreak and heat-waves in summer, which can grill the berries.