



## The climate in the Venetian and North Adriatic region: variability, trends and change

workshop

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### TOPIC T4. Storminess, waves and storm surge

#### Trends and characteristics of cyclones affecting northern Italy

Uwe Ulbrich<sup>1</sup>, Katrin Nissen<sup>1</sup>, Joaquim Pinto<sup>2</sup>, Sven Ulbrich<sup>2</sup>

<sup>1</sup>Freie Universität Berlin, Berlin, Germany

<sup>2</sup>Universität zu Köln, Köln, Germany

email: ulbrich@met.fu-berlin.de

#### *Short abstract:*

Cyclones affecting northern Italy have been identified and tracked in the ERA40 dataset with an algorithm developed by Murray and Simmons

(1991) which has been adapted to Northern Hemisphere conditions by Pinto et al. (2005). The annual cycle of the number and strength of cyclones in northern Italy is shown and trends are determined. Preferred regions of cyclogenesis for cyclones affecting northern Italy are identified, quantifying the dominance of cyclones formed over the Gulf of Genoa and cyclones entering the Mediterranean region from the Atlantic Ocean.

Favorable conditions for the development of Genoa cyclones include a North Atlantic cyclone is propagating against the Scandinavian mountain ridge. An index describing this situation is introduced.

Additionally, influences of large scale Euro-Atlantic patterns on the occurrence and intensity of the cyclones are discussed. The number of Atlantic cyclones is, for example, significantly reduced during the positive phase of the North Atlantic Oscillation compared to its negative phase.