Geophysical Research Abstracts, Vol. 7, 00656, 2005
SRef-ID: 1607-7962/gra/EGU05-A-00656
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The structure of Mediterranean cyclones – focusing on conveyor belts

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The inner structure of the Mediterranean Cyclones is inspected, searching for the existence of the conveyor belts and their related characteristics. The analysis is done using isentropic streamline maps, where the wind field is relative to the cyclone velocity, satellite imagery and air trajectories (using the HYSPLIT Model).

The results show that the warm conveyor belt is well defined, though not always accompanied by thick cloudiness. The lack of cloudiness is attributed to the arid origin of the warm air masses involved. The cyclonic branch of the cold conveyor belt is well defined, whereas the anti-cyclonic branch is found only in the minority of the cyclones.

A large degree of similarity is found between the isentropic streamlines and the respective observed cloud patterns, whereas the air trajectories showed different patterns. The results, using the three methods, will be presented and discussed for several case studies.