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Lagrangian study of precipitation over Western Norway

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Ten episodes with large amount of precipitation over the western coast of Norway are examined. The episodes are chosen based on precipitation data from the Norwegian meteorological office from three measurement sites at the Norwegian coast. A Lagrangian particle dispersion model is run for the ten days prior to the precipitation episodes with input from ERA40-data. The trajectories of the particles giving precipitation over Western Norway are examined to find areas of evaporation, and thereby comparing geographic locations and other parameters of the evaporation areas to find similarities and dissimilarities between the situations. In addition the relationship between the trajectories and the synoptic situation in the atmosphere is also examined. This is done to investigate how the atmosphere dynamics is influencing the trajectories and the transport of moisture. The synoptic situation of the atmosphere related to the ten episodes are compared in order to find similarities and dissimilarities regarding the atmospheric conditions that are favorable for transporting large amounts of precipitation to the Western coast of Norway.