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Relationship between local carbon-dioxide concentration and large-scale circulation

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Carbon-dioxide concentration data measured at 113 m height on a tower in Hegyhatsal, Hungary covering a period from 1998-2002 are linked to large-scale circulation. Large-scale circulation is characterized by backward trajectories coming to the tower at 500 m level. These data are obtained from NOAA Air Resources Laboratory. The trajectories are classified into types, and statistical characteristics of concentrations conditioned on these types are calculated and analysed. Several parameters along trajectories such as mixing layer height and precipitation are also considered. Carbon-dioxide concentrations are statistically linked to these parameters. Our paper proposed will discuss results obtained from the analysis.