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Circulation type classifications compared with dynamical mode analyses

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Classifications of large-scale pressure fields into atmospheric circulation types will be compared with dynamical mode analyses, another fundamental approach for studying atmospheric circulation dynamics. Main conclusions may be summarized as follows: Strict assignments of individual objects to disjunctive groups (as done by classifications) may represent a serious simplification of complex reality, but are necessary or at least favourable if direct relations of the atmospheric circulation to individual events (e.g. meteorological extremes) are required or if internal characteristics of atmospheric circulation patterns have to be determined by means of particular parameters (e.g. relative vorticity or flow intensity). On the other hand, without such requirements mode analyses may be more appropriate for analysing complex data sets since generic circulation patterns (instead of simple composite patterns) can be derived allowing to represent original pressure fields as superimpositions of such generic patterns with varying weights.