



Mass flux diagnostics in CRM studies

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A number of different definitions for updraft, downdraft, in-cloud and convective mass fluxes are frequently used in order to diagnose vertical air and tracer mass fluxes in cloud resolving model (CRM) studies. The various mass fluxes are defined either with respect to cloudy, convective or updraft area or with respect to the entire domain. The differences between the definitions are often large. Here, the influence of using different definitions for the various kinds of mass fluxes will be investigated as well as the sensitivity of diagnosed mass fluxes to different model setups for a TOGA COARE case study. For some definitions, gravity wave like oscillatory motions can account for a large part of the diagnosed vertical mass flux.