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Vertical transport over the maritime continent in a regional model: impact of different convection parameterisations

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In order to investigate the tracer transport into the tropical tropopause layer simulations for the West Pacific warm pool area have been performed with the regional model REMOTE. Idealised tracers with constant life time and constant emissions or concentrations at different locations and heights have been defined to separate between the parameterisation of transport and removal processes. Simulations have been carried out with two different convective schemes. The original Tiedtke scheme is a standard mass flux scheme. The Convective Cloud Field Model (CCFM) is a novel approach based on population dynamics and convective cloud fields. For different seasons the simulation with both schemes will be compared against observations. The idealised tracer will be used to quantify and differentiate between large scale and convective vertical transport. The large scale transport is sensitive to differences in convective transport. Convective and large scale transport are coupled in a non-linear fashion in that total precipitation can increase even if convective transport is decreased.