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The behaviour of sea salt particles in a deep convective cloud environment.

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The behaviour of sea salt aerosol during downdraught-induced outflow from convective systems is examined using a 2D cloud-resolving model (CRM). It is shown that sea salt exists on non-random localised scales, and that resolving the interaction between the 'cold pool' outflow and aerosol population is important for various aspects of the aerosol behaviour. Precipitation within the convective domain is co-located with regions of maximum and minimum aerosol, and arises due to a build-up of sea salt aerosol inside the turbulent cold pool head, a region where precipitation from secondary convection tends to occur. Aerosol is subsequently scavenged by precipitation on local scales faster than the precipitation lifetime itself. An inability to resolve such features, such as in global models, will have a significant influence on aerosol transport and scavenging.