Author	What?	Where?	Results	Details of results
Lu et al. 2009	Aerosol-cloud-drizzle relationship	Monterey California (MASE-II experiment)	1) Increase of *Nc* and decrease of *re* are associated with increase subcloud *Na.* 2) $Nc\ \alpha\ 1/d$ 3) $Rcb\ \alpha\ H^3/Nc$ 4) Cloud precipitation susceptibility to aerosol perturbation So'=0.60-0.63 (satellite derived value)	1) Relation is enhanced in close to adiabatic *LWC* cases (constant *LWC*: Twomey effect) 2) Relation is enhanced in non-adiabatic conditions. Greater *d* near the cloud base due to downdraft entrainment and/or depletion of water by drizzle. 3) Corroboration of the inverse relation with observational data. 4) So'=-dlnR/dlnα (at fixed LWC)
Comstock et al. 2004	Reflectivity and rain rate as a function of drizzle, Nc, and mean size	Southeast Pacific Ocean: EPIC experiment	1) $Z=aR^b$ where *b* is related to the relative variability of *Nc* and *r* 2) Drizzle rate in Sc are dependent on both *LWC* and *Nc* 3) Inverse relationship between R and Nc	1) a and b values are inferred from different independent datasets.
Khairoutdinov et al. 2000	1) Nc, cloud/drizzle mixing ratios, cloud drizzle Nc, cloud drop integral ratios. 2) Cloud water sources and sinks by drizzle are regressed using the Nc size spectra	Large Eddy Simulation	1) In drizzle conditions *Nc* and *Na* decreases. 2) Drizzle initiation depends on the prediction of Nc and *LWC.* 3) Drizzle fallout rate (drizzle dwelling time in cloud) is a function of drizzle drop concentration.	1) Introduction of *Na* as a variable from which *Nc* is predicted
Pawlowska and Brenguier 2002	Aerosol-cloud-drizzle relationship (in a suitable scale for GCM)	Eastern Atlantic Ocean: ACE-2 experiment	1) Auto-conversion threshold 2) Existing parameterization schemes 3) Grid scale diagnostic of the precipitation rate	1) The two pristine cases, exhibit *Nd* reduction by droplet collection, while the three polluted cases exhibit smaller drizzle concentrations and predominantly in association with comparable or larger *Nd* values than Nact. 2) It appears that the drizzle reduction rate by precipitation is accurately represented by a $H^3/Nact$ 3) Precipitation process in extended boundary layer clouds could be treated in GCM with a diagnostic scheme based on only H and Nact.
Lu et at. 2007	1) Ship track effect on Nc and r: direct effect 2) Ship track effect Nd and LWC: indirect effect	Monterey California: MASE-II experiment	1) The ship track region exhibited a smaller *re*, reduced *Nd*, and larger cloud *LWC* than the adjacent clean region. 2) As subcloud Na increase *Nd* increases. 3) Smaller and more numerous drizzle drops were found near the cloud top. 4) The smaller cloud base drizzle rate does not result in a larger LWP when compared with the clean clouds.	1) Evidence for the first indirect effect, and indirect effect. 2) Robust evidence of Twomey effect 3) The data suggest that more polluted cloud have fewer embryonic drizzle drops near cloud top, resulting in a smaller cloud base drizzle rate. 4) It appears that direct conversion of cloud drops to drizzle is insufficient to explain the dependence of LWP on aerosol number concentration.

Author	What?	Where?	Results	Details of results
Stevens et al. 2005	**Pockets of open cells and drizzle**	**1) Southeast Pacific: EPIC experiment 2) Northeast Pacific: DYCOMS-II experiment.**	**Long-lived regions of open cellular convection are coupled to the development of precipitation**	**1) Observation (satellite imagery) of POC formation from a region of open cellular convection. 2) Values near zero of ΔT_B within the POC region. 3) the largest precipitation rate (1 cm day^{-1}), in DYCOMS-II observations, occurs within the POC 4) Precipitation from Sc drives a more diabatic (cumulus like) circulation with narrower regions of convective ascent**
Agee 1984	**Satellite observation to study dynamic climatology: Mesoscale cellular convection**		**1) MCC occurs primary to the east of continents over warm ocean or to the west of continent over cold ocean. 2) Two convective mechanisms of MCC: heating from below and cooling from above**	**1) Cases of study in Steven et al. (2005): Southeast Pacific and Northeast Pacific, correspond to the latter case. 2) The the west of continent MCC formation respond to the cloud top cooling and inferred destabilization**
van Zanten et al. 2004	**Nc-drizzle relationship Drizzle rate variation with brightness temperature and re**	**Northeastern Pacific: DYCOMS-II experiment**	**1) The averaged drizzle rates are mainly due to the occurrence of localized patches of strongly enhanced precipitation. 2) Variability of drizzle rate correlate well with Rcb α H^3/Nc. 3) On the macroscopic scale the drizzle rate also correlates negatively with *T and* shows signs as well of thresholdlike dependence on in situ cloud-top effective radius.**	**1) This strongly suggests that drizzle could induce a transition in cloud structure 2) Thus higher precipitation rates are not due to a change in shape of the drizzle drop distribution but are mainly caused by the more frequent occurrence of larger drizzle drops. *3) ΔT= difference* between the 11-m and 14-m brightness temperatures as measured by the *GOES-10 satellite***
Bretherton et al. 2004	**Nc-drizzle relationship**	**South East Pacific Ocean: EPIC experiment**	**1) Less drizzle falling fro a cloud of a given thickness during period of high droplet number concentrations**	**1) Results are derive from LWC estimated from microwave radiometer and a estimate of the cloud droplet concentrations.**
Stevens et al. 2003		**Northeast pacific: DYCOMS-II experiment**	**1) CTEI=0.45 Value significantly larger than the critical value of 0.23 thought to portend the break-up of the cloud layer. 2) entrainment rate of 0.39 com s^{-1}. 3)LES was evaluated against the observational data, reproducing in good agreement the macroscopic evolution of the cloud layer.**	**1) CTEI stability parameter is derived from comparison of the STBL and Free-tropospheric states . 2) From consistent quasi-independent estimates. 3) Difficulty in maintaining the observed inversion-layer structure). Further work is necessary using LES with more accurate representations of long-wave radiative transfer**