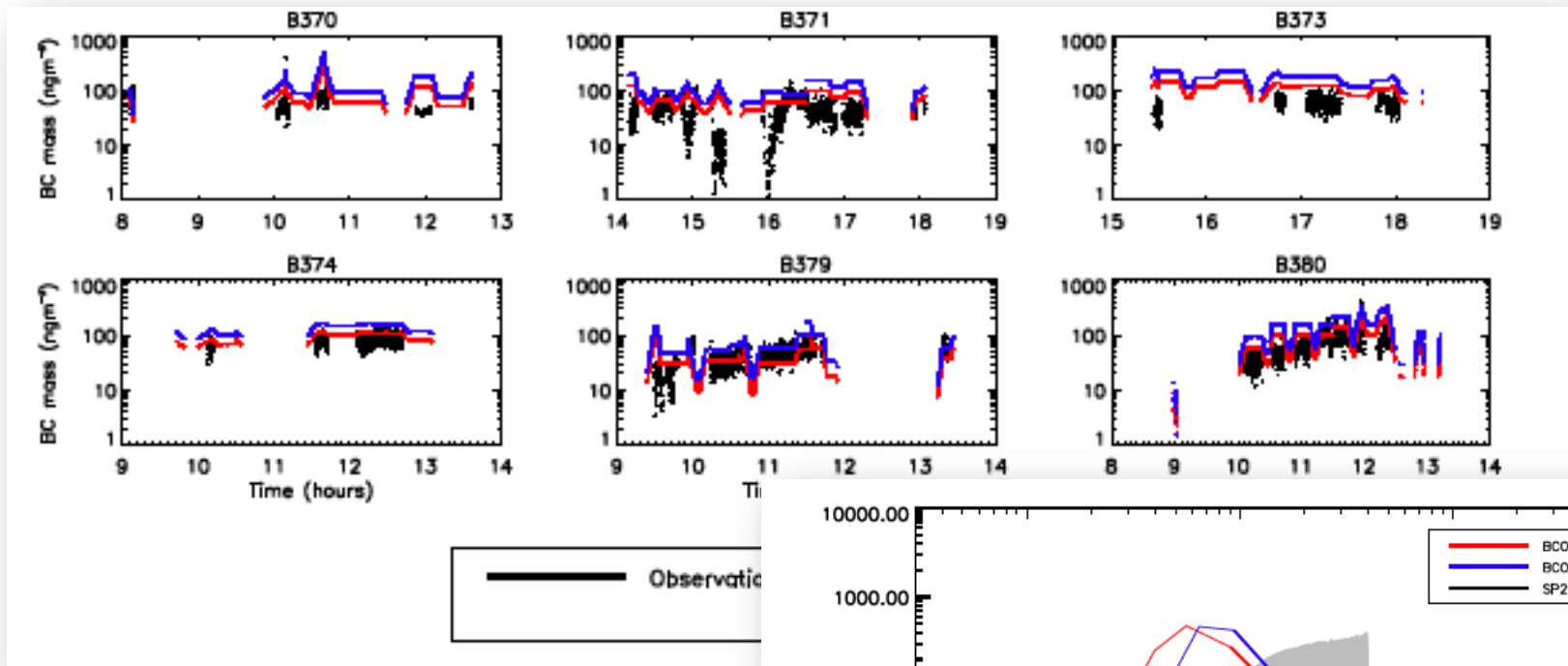


# Carlaw 1: Analysis of BC size distribution over Europe (*Reddington et al.*)

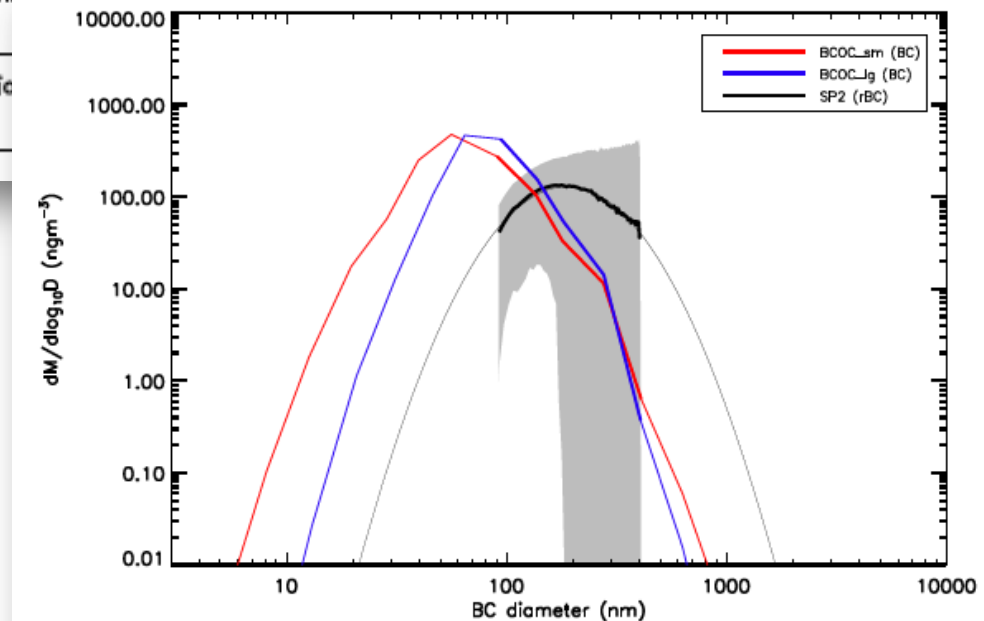


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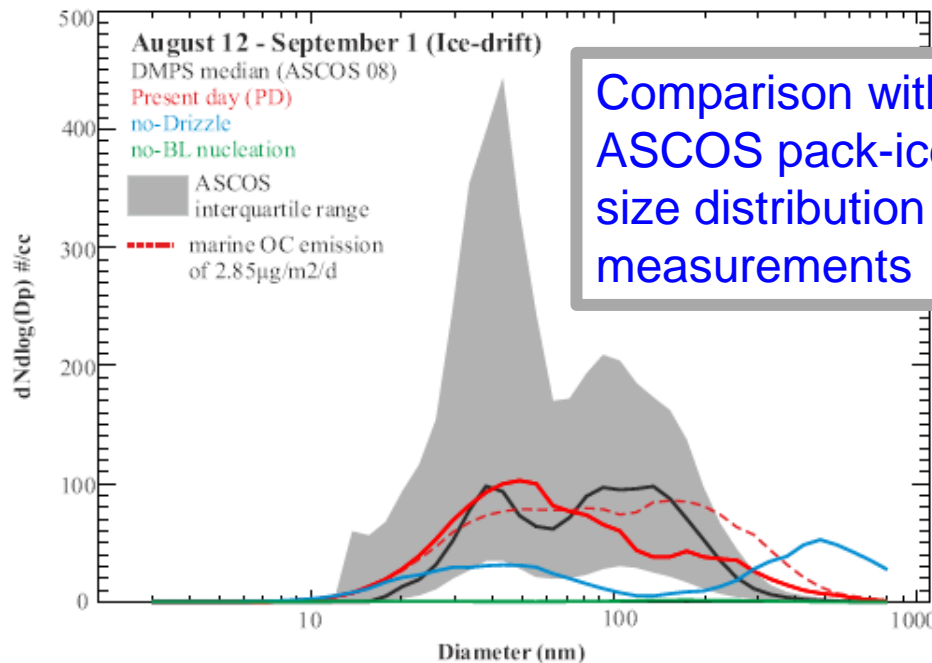


***Analysis of SP2 observations over Europe shows large mismatch in the size distribution of the BC component versus the model.***

***The total aerosol size distribution agrees well***



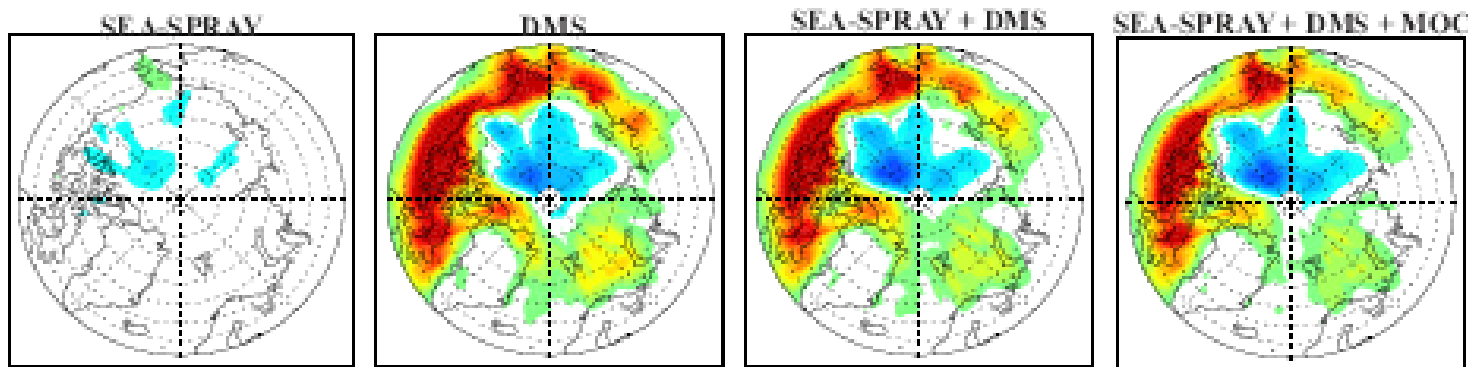
# Carlaw 2: Response of Arctic CCN to sea-ice loss (*Browse et al.*)



## High-Arctic CCN

concentration falls when sea ice is removed despite more natural aerosol and precursor emission

Can be understood in terms of aerosol processes in a strongly scavenging environment

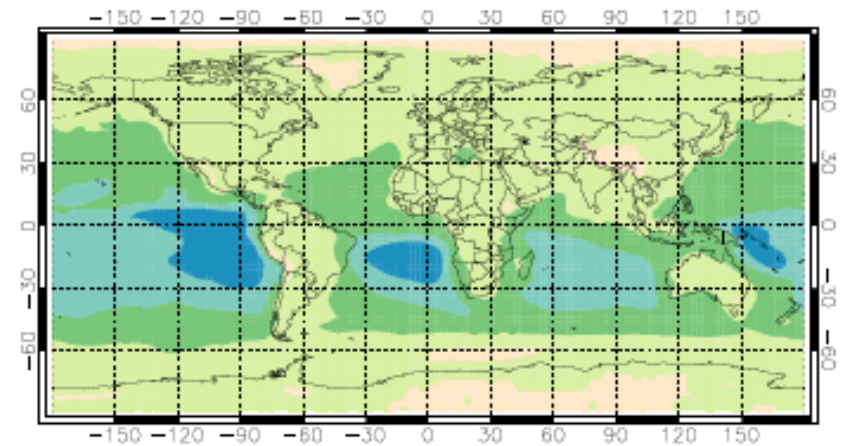


Change in surface (0-50m) CCN number ( $R_{CCN} > 35\text{nm}$ )

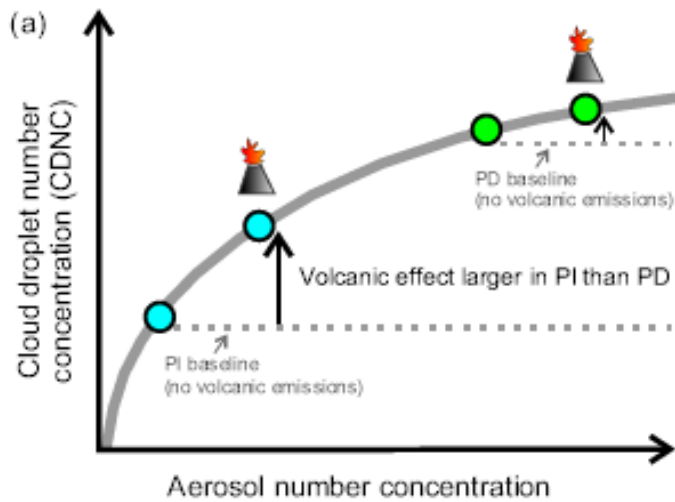
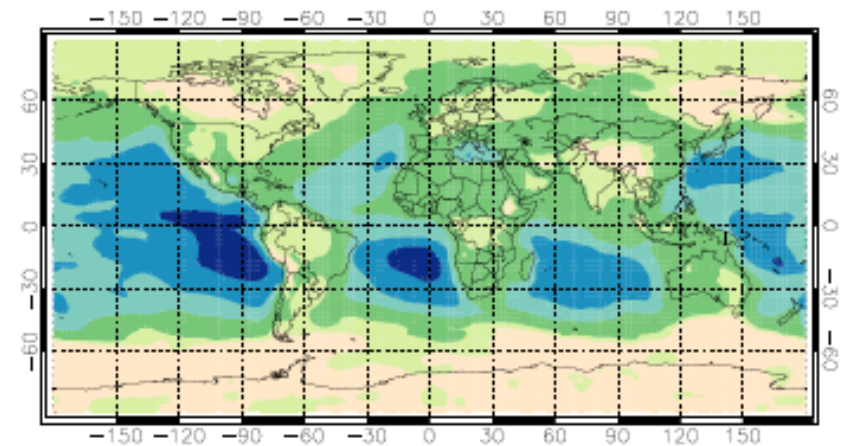
# Carslaw 3: Tropospheric volcanic aerosol and indirect forcing (*Schmidt et al.*)



a) PD net TOA cloud albedo effect. Global mean =  $-0.56 \text{ W m}^{-2}$



b) PI net TOA cloud albedo effect. Global mean =  $-1.06 \text{ W m}^{-2}$



$$\text{cloud albedo effect} \propto \frac{\Delta \text{CDNC}}{\text{CDNC}_{\text{baseline}}}$$