Identifying an extratropical cyclone cold wake

Helen Dacre

University at Reading

Many studies have investigated the response of altered sea surface temperatures (SSTs) on the mid-latitude storm track position and intensity. These studies show that the storm tracks respond to changes in both the mean SST and SST gradients suggesting that oceanic heating could be a contributing factor to the observed shift in the storm tracks. However, there has been less attention paid to the effect of extratropical cyclones on surface ocean properties. It has been previously shown that stronger extratropical cyclones lead to larger positive turbulent fluxes in the rear of the cyclone behind the cold front. In this study we evaluate the effect of these fluxes on SSTs and identify a long trailing extratropical cyclone ‘cold wake’. Finally, we quantify the contribution of accumulated extratropical cyclone cold wakes to the formation of winter season cold SST anomalies in the North Atlantic.