Seasonal variations in aerosol-cloud interactions over the southeast Atlantic and their radiative impact

The southeast Atlantic is a natural laboratory for a wide range of interactions between shortwave-absorbing aerosols and marine low clouds. The dominant interactions vary with the large-scale circulation throughout the seasonal cycle, with the processes and net radiative impact attributable to the aerosols not yet well-defined as a function of time. The student will help to articulate this, using field campaign data, reanalysis and modeling.

During September, winds at 600 hPa advect smoke (warm colors) westward from fires in continental Africa over a large marine low cloud deck. The inset highlights how, further offshore, the lowering smoke layer and deepening cloud layer are more likely to directly interact with each other. From Zuidema et al 2016 BAMS