



Hygroscopic properties of atmospheric and model humic like substances (HULIS)

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A major fraction of atmospheric aerosol particles is composed of high molecular weight water soluble organic compounds which contain polycarboxylic acids and a heterogeneous mixture of structures containing aromatic, phenolic and acidic functional groups. These compounds are known as humic materials (HMs) and referred to in atmospheric chemistry literature as HUmic-Like Substances. We will present detailed study on the hygroscopic properties of HULIS extracted from three different aerosol types: fresh wood burning smoke, aged wood burning smoke and aged local air pollution particles and will compare them with this of FA from aquatic sources (Suwannee River FA, often used as models in laboratory studies) separated into several fractions by molecular weight and. Specifically we will discuss how the activation of aerosols composed of these species into cloud droplets depends on physico-chemical parameters such as molecular weight, chemical structure and surface tension. Comparison with model calculations will be presented.