



Bioaerosols in the Earth System

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Bioaerosols consisting of primary biological particles such as bacteria, spores and pollen are essential for the spread of organisms in the biosphere, and numerous studies have suggested that they may be important for atmospheric processes, including the formation of clouds and precipitation. The sources and diversity, atmospheric abundance and transport, physicochemical properties and transformation of bioaerosols, including their activity as cloud condensation and ice nuclei (CCN, IN), however, are not yet well characterized. Thus, their actual influence on the evolution, present state and future development of the Earth system, the hydrological cycle and other biogeochemical cycles is poorly constrained. Recent advances will be outlined and discussed.