



SOLAS Open Science Conference 2009

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Discussion Session Proposal

Discussion session proposal form

	Convener	Co-convener (if any)	Rapporteur
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Session title	Ocean-Derived Aerosols: Production, Evolution, and Impacts		
Background and motivation, e.g. research question (max. 150 words, no figures/ tables)	<p>The oceans are the largest global source of aerosol by mass to the atmosphere. Produced by breaking waves and bursting bubbles, freshly produced marine aerosol is mass dominated by super-μm particles composed primarily of sea salt and number dominated by submicron aerosol composed of a mixture of sea salt and organic matter. Ocean-derived aerosols affect atmospheric chemistry and are thought to play an important role in controlling cloud formation and properties thereby affecting the Earth's radiation balance. Nonetheless, primary marine aerosol composition, evolution and atmospheric impact are poorly constrained owing to several salient unanswered questions: 1) What is the chemical composition of ocean-derived aerosols? 2) How do upper-ocean biogeochemical processes affect the fluxes, and physical and chemical properties of marine aerosols, and how do these fluxes and properties vary seasonally and spatially? 3) What is the significance of submicron ocean-derived aerosols relative to continental emissions transported out over the oceans and emissions from marine vessels? 4) Do ocean-derived aerosols affect cloud properties?</p>		
Intended outcome, action or product following the discussion session (max. 50 words)	<p>The goal of our session is to explore potential international collaborations and opportunities in the form of integrated field and modeling studies to address some fundamental yet unresolved questions regarding marine aerosols that will allow us to assess their impact on radiative transfer and tropospheric chemistry.</p>		