



Interactions and feedbacks between wildfire, atmospheric aerosol and climate

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Fire is an important source of atmospheric aerosol and has significant impacts on atmospheric composition. Wildfires are controlled by climate, vegetation and human activity and there have been large changes to wildfire in the past and there is potential for important changes in the near future. Wildfire aerosol impacts on many components of the Earth system, including the atmospheric radiative balance, albedo of snow and nutrient supply to ecosystems, so there are likely to be important climate feedbacks. It is critical to understand how such interactions and feedbacks influence atmospheric composition and climate. I will summarise recent advances in our understanding of the impacts of wildfire on global atmospheric aerosol and examine attempts to quantify the direction and magnitude of wildfire-aerosol-climate feedbacks. I will discuss key uncertainties and future research challenges and opportunities.