1. Record Nr. UNINA9910299559703321

Autore	Scott Catherine E
Titolo	The Biogeochemical Impacts of Forests and the Implications for Climate Change Mitigation / / by Catherine E. Scott
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-07851-8
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (142 p.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	363.73874561
Soggetti	Atmospheric sciences Climate change Plant biochemistry Atmospheric Sciences Climate Change/Climate Change Impacts Plant Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Model Description -- The Impact of Biogenic SOA on Particle and Cloud Condensation Nuclei Concentration -- The Radiative Impact of Biogenic SOA -- The Impact of Volatility Treatment -- The Radiative Effects of Deforestation -- Conclusions, Implications and Further Work.
Sommario/riassunto	Forests and vegetation emit biogenic volatile organic compounds (BVOCs) into the atmosphere which, once oxidized, can partition into the particle phase, forming secondary organic aerosols (SOAs). This thesis reports on a unique and comprehensive analysis of the impact of BVOC emissions on atmospheric aerosols and climate. A state-of-the-art global aerosol microphysics model is used to make the first detailed assessment of the impact of BVOC emissions on aerosol microphysical properties, improving our understanding of the role of these emissions in affecting the Earth’s climate. The thesis also reports on the implications for the climate impact of forests. Accounting for the climate impacts of SOAs, taken together with the carbon cycle and

surface albedo effects that have been studied in previous work, increases the total warming effect of global deforestation by roughly 20%.