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冬期セミナー

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# Ozone and forests: from biological processes to environmental protection

11月14日(金) 13時30分～

於: 7号館A棟7階会議室

DATE: Friday 14th Nov. 2014 at 13:30

VENUE: meeting room, #7A Bldg., 7F

speaker



## Dr. Elena Paoletti

Senior Scientist,  
Institute Plant Protection-  
National Council of Research(IPP-CNR)

abstract:

Ground-level ozone is a significant greenhouse gas and phytotoxic pollutant. Recent developments suggest that ozone has the potential to impair bio-diversity, carbon sequestration and water control at global level. This seminar will summarize the state of the art of scientific knowledge about the environmental impacts of ozone, with a focus on forest species and ecosystems, and how to translate this knowledge into scientifically-sound criteria for protecting plants from ozone. Research tools in ozone science, biological responses to ozone exposure, models of stomatal ozone uptake and epidemiological approaches will be discussed.

**Dr. Elena PAOLETTI** *biography*

education: Laurea Forest Science 1987, University Florence ;  
PhD Agricultural Biology 1989-92, University Florence;  
CNR grant fellow 1993-94, CSPSLM-CNR, Florence ;  
postdoc 1995-6, University Florence ;

CNR Research fellow 1996-2001, Senior scientist 2001-today, IPSP-CNR, Florence  
Elena Paoletti is CNR senior scientist. She is a plant ecophysiological and works in particular with the impacts of air pollution and climate change on plant ecosystems. She coordinates the IUFRO (International Union of Forest Research Organizations) Research Group 7.01 "Impacts of Air Pollution and Climate Change on Forest Ecosystems" and the SISEF (Italian Society of Silviculture and Forest Ecology) Working Group "Pollution and Forests". She is Secretary of SISEF. Invited speaker (18) or chairperson (13) at several scientific meetings, she was member of the organizing/scientific committee of 42 meetings. Supervisor of several pre- and post-doctoral students (in Italy and Finland), she got the CNR AgroFood Department Award 2010 for excellence in sustainable agriculture and the IUFRO Forest Health Award 2010 for Achievement in Forest Health Research. Evaluator of project proposals (for the 7FP-EU, ESF and several institutions in Finland, USA, Czech Republic, Spain, Italy, Belgium, UK), journal manuscripts (on average, 15 a year) and position applications (in Italy, USA, Finland), she is associate editor for the journals *iForest* and *Environmental Pollution*. Principal investigator (11) and coordinator (9) of scientific projects, she was Chair of the COST Action FP0903 "Climate Change and Forest Mitigation and Adaptation in a Polluted Environment" (2009-2013). Author of around 200 publications, of which 105 are issued in Scopus with 2224 total citations and 25 as *h*-index (Google Scholar).



参加申込・問合せ先:

細井文樹 (生物環境情報工学)

contact:

Fumiki HOSOI (ahosoi@mail.ecc.u-tokyo.ac.jp)  
(Lab. of Biological and Environmental Information Engineering.)

information

AGRI-COCOON

Agricultural Research Incubator Community for Cooperative Network of Public, Administrative, Business, and Academic sectors.  
room 105A, #3 Bldg., Graduate School of Agricultural & Life Sciences

TEL: 03-5841-8882 (ext. 28882)

e-mail: office@agc.a.u-tokyo.ac.jp

http://www.agc.a.u-tokyo.ac.jp

## ELENA PAOLETTI - SHORT CV

EDUCATION: Laurea Forest Science 1987, University Florence (I); PhD Agricultural Biology 1989-92, University Florence (I); CNR grant fellow 1993-94, CSPSLM-CNR, Florence (I); postdoc 1995-6, University Florence (I); CNR Research fellow 1996-2001, Senior scientist 2001-today, IPSP-CNR, Florence (I)

PRESENT ADDRESS: Institute of Sustainable Plant Protection, national research Council (IPSP-CNR)  
Via Madonna del piano 10, 50019 Sesto Fiorentino, Florence Italy  
Tel +39 055 5225 591 Fax +39 055 5225 666 Email elena.paoletti@cnr.it  
Website: <http://www.ipp.cnr.it/en/personale/75-paoletti-elena.html>



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### Recent papers

1. Augustaitis A., Bytnerowicz A., PAOLETTI E.: 2014, **Biological reactions of forests to climate change and air pollution**. *Environmental Pollution*, 184: 657-658.
2. Katanic M., PAOLETTI E., Orlovic S., Grebenc T., Kraigher H.: 2014, **Mycorrhizal status of an ozone-sensitive poplar clone treated with the antiozonant ethylene diurea**. *European Journal of Forest Research* 133: 735-743.
3. Hoshika Y., Carriero G., Feng Z., Zhang Y., PAOLETTI E.: 2014, **Determinants of stomatal sluggishness in ozone-exposed deciduous tree species**. *Science of the Total Environment*, 481 453–458.
4. PAOLETTI E., De Marco A., Beddows D.C.S., Harrison R.M., Manning W.J.: 2014, **Ozone levels in European and USA cities are increasing more than at rural sites, while peak values are decreasing**. *Environmental Pollution* 192, 295-299.
5. De Marco A., Vitale M., Kilic U., Serengil Y., PAOLETTI E.: 2014, **New functions for estimating AOT40 from passive sampling**. *Atmospheric Environment* 95, 82-88.
6. Wu C., Pullinen I., Andres S., Carriero G., Fares S., Goldbach H., Hacker L., Kasal T., Kiendler-Scharr A., Kleist E., PAOLETTI E., Wahner A., Wildt J., Mentel T.F.: 2014, **Impacts of soil moisture on de-novo monoterpene emissions from European beech, Holm oak, Scots pine, and Norway spruce**. *Biogeosciences Discussion* 11: 12985-13027 [www.biogeosciences-discuss.net/11/12985/2014/](http://www.biogeosciences-discuss.net/11/12985/2014/) doi:10.5194/bgd-11-12985-2014
7. Fares S., Savi F., Muller J., Matteucci G., PAOLETTI E.: 2014, **Simultaneous measurements of above and below canopy ozone fluxes help partitioning ozone deposition between its various sinks in a Mediterranean Oak Forest**. *Agricultural and Forest Meteorology* 198–199: 181–191.
8. Hoshika Y., Omasa K., PAOLETTI E.: 2013, **Both ozone exposure and soil water stress are able to induce stomatal sluggishness**. *Environmental and Experimental Botany*, 88: 19-23.
9. Fares S., Vargas R., Detto M., Goldstein A.H., Karlik J., PAOLETTI E., Vitale M.: 2013, **Tropospheric ozone reduces carbon assimilation in trees: estimates from analysis of continuous flux measurements**. *Global Change Biology*, 19: 2427–2443.
10. Hoshika Y., Pecori F., Conese I., Bardelli T., Marchi E., Manning W.J., Badea O., PAOLETTI E.: 2013, **Effects of a three-year exposure to ambient ozone on biomass allocation in poplar using ethylenediurea**. *Environmental Pollution*, 180: 299-303.