



Organisation météorologique mondiale
World Meteorological Organization

Statement on the Occasion of the 2012 Norbert Gerbier-MUMM International Award Ceremony

M. Jarraud
Secretary-General

(Geneva, Switzerland, 2 July 2012)

TEMPS WEATHER
CLIMAT CLIMATE
EAU WATER

A faint, light blue background graphic featuring a globe with a compass rose overlaid on it, centered behind the text.

**STATEMENT ON THE OCCASION OF THE 2012
NORBERT GERBIER-MUMM INTERNATIONAL AWARD CEREMONY**

by

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Dr David Grimes, President of WMO,

Ms Frances Chisholm, Economic Counsellor of the Permanent Mission of the United States of America to the United Nations Office and other international organizations in Geneva,

Mr Marc Gillet from Météo-France, Representing Madame Guiard-Gerbier and Mr François Jacq, Permanent Representative of France with WMO,

Dr Chuixiang Yi and Mr John Wolbeck,

Distinguished EC members and Representatives of Members and Partners of WMO,

Distinguished Guests, Dear Colleagues, Ladies and Gentlemen,

I would like to welcome you to this ceremony and to recall that twenty-five years ago, in 1987, the thirty-ninth session of the WMO Executive Council instituted the Norbert Gerbier-MUMM Award, in memory of the late Mr Norbert Gerbier, who served WMO with distinction from 1979 to 1985 as president of its Commission for Agricultural Meteorology (CAGM). In 1991, the forty-third EC session renamed the prize as Norbert Gerbier-MUMM International Award.

I sincerely regret that Ms Geneviève Guiard-Gerbier has not been able to join us on this occasion. The purpose of the Award has traditionally been to encourage and reward an original scientific paper on the influence of meteorology on the physical, natural or human sciences, or conversely, to stimulate research on the influence of these sciences upon meteorology, thereby contributing to WMO Programmes and activities. The Award consists of a diploma, a medal bearing the image of Mr Norbert Gerbier and a monetary prize.

Each year, several eminent scientists are requested to appraise the papers considered for this key award. The Executive Council Selection Committee subsequently reviews these assessments and, on the basis of the Committee's recommendations, the Council makes the final selection.

In 2011, the sixty-third session of the Executive Council conferred the 2012 Award to a group of 151 scientists from 116 academic institutions, in particular to Dr Chuixiang Yi, Mr John Wolbeck,

and Mr Xiyan Xu of the City University of New York, Dr Daniel Ricciuto of the Oak Ridge National Laboratory (USA), Dr Runze Li of the Pennsylvania State University, Dr Mats Nilsson of the Swedish University of Agricultural Sciences and 145 other contributing authors for the paper entitled "*Climate control of terrestrial carbon exchange across biomes and continents*", published in 2010 Environmental Research Letters in 2010, Volume 5 - a remarkable number compared to the total of 148 prize recipients over the period from 1988 to 2011.

Mr President, Ladies and Gentlemen,

The relationship between climate and carbon exchange of terrestrial ecosystems is indeed critical in predicting future atmospheric carbon dioxide levels, in particular because of the potential accelerating effects of positive climate–carbon cycle feedbacks.

However, directly observed relationships between climate and terrestrial CO₂ exchange with the atmosphere across different ecosystems and continents were generally lacking, so the authors focused on the relationships between *net ecosystem exchange* of carbon (NEE) and climate factors, as measured using the eddy covariance method at 125 unique sites in various ecosystems over six continents, for a total of 559 site-years and latitudes between 37°S and 71°N, during the period from 1992 to 2008.

The authors noted that NEE observed at eddy covariance sites is:

1. A strong function of mean annual temperature at mid- and high-latitudes;
2. A strong function of dryness at mid- and low-latitudes; and
3. A function of both temperature and dryness around mid-latitudes (~ 45°N).

They also noted that NEE sensitivity to mean annual temperature breaks down at a threshold value of about 16°C, above which no further increase of CO₂ uptake with temperature is observed and the influence of dryness overrules the effect of temperature.

Findings suggest that NEE at mid- to high-latitudes is largely controlled by the mean annual temperature, whilst at mid- to low-latitudes, it is controlled largely by dryness. The geographic region around 45°N appears to be a transition zone where several sites are co-limited by both temperature and dryness.

The authors stress that these findings are essential in understanding how future climate change may affect terrestrial CO₂ exchanges with the atmosphere over the 21st century, recalling that according to the IPCC Fourth Assessment Report (2007), the projected warming during this century is more important over land and at high northern latitudes, whilst decreases in precipitation are likely in most subtropical land regions, implying that the most likely future climate change scenarios could strongly intensify terrestrial CO₂ uptake at high-latitudes and weaken the uptake at low-latitudes.

Mr President, Ladies and Gentlemen,

This year the award-winning paper has been a combined accomplishment of 151 distinguished scientists. Unfortunately, it was impossible to have them all here at this ceremony, so I wish to congratulate them through those present today, for an outstanding achievement worthy of the prestigious Norbert Gerbier-MUMM International Award.

Thank you.
