

# INVITATION

## PAGES workshop

### **Holocene land-cover change in Eastern Asia for climate modelling**

A contribution to PAGES Focus 4, Theme **Land use and Land cover (LULC)**

**Location:** Hebei Normal University, Shijiazhuang, China

**Dates:** October 8<sup>th</sup>-11<sup>th</sup> 2012

#### ***BACKGROUND and OBJECTIVES***

A major goal of Focus 4 Theme Land Use and Land Cover is to achieve Holocene land-cover reconstructions for the globe that are useful for the development of robust climate models and that can be used to test hypotheses on e.g. past and future land cover-climate feedbacks and other past land cover-environment relationships relevant for the working groups of Focus 4. Several initiatives have contributed to that goal. (I) LANDCLIM (Gaillard et al., 2010) focuses on Holocene pollen-inferred land-cover reconstructions in NW and W Europe N of the Alps using the REVEALS model (Sugita, 2007a). These are used in a model-data comparison approach that evaluates a vegetation model and a regional climate model. LANDCLIM has currently achieved the first generation of Holocene REVEALS reconstructions for NW-W Europe (II) A PAGES workshop in India (January 2011) gathered a large number of palaeoecologists from India and identified three research themes to focus on, i.e. Indian pollen database, pollen productivity estimates and REVEALS applications, and archeology and paleoecology (syntheses and databases). (III) LANDCLIM collaboration on pollen productivity estimates for major taxa in Northern China (Prof. Q. Xu and Y. Li) and Japan (Prof. Hikaru Takahara) was initiated two years ago. A meeting organized at the Hebei Normal University by Prof. Xu (April 2011) gathered together senior researchers and PhD students from China and European researchers with expertise in pollen-vegetation modelling in order to discuss the potentials for future collaboration.

The goal of the PAGES workshop is to initiate the necessary collaborations and activities to make past land-cover reconstructions possible. The major objectives are:

- gather together palynologists from China, India, Japan, Korea, Eastern Russia and Mongolia to introduce the aims of Focus 4 Theme LULC (M.-J. Gaillard) and the pollen-vegetation modelling methods using pollen data (S. Sugita) or other approaches (HYDE, J. Kaplan's KK10, etc.)
- work out a plan to estimate pollen productivity estimates for the major taxa of Eastern Asia
- update the community on existing pollen databases and initiate an Eastern Asian pollen database

## Preliminary Program

**Arrival: October 8<sup>th</sup> 2012**

*14.00-18.00: Registration*

*19.00: Welcome and Ice-Breaking get-to-gather with some food*

### **Day 1: October 9<sup>th</sup> 2012**

*8.00-9.00: Registration*

#### ***Session 1: Past land-cover – why and how I***

*9.00-10.00: Welcome and Introduction*

*Welcome by the leaders of the University, Hebei Province and NSFC*

*Introduction by Prof. Q. Xu and Prof. M.-J. Gaillard*

*10.00-10.15: Break*

#### ***1) Global land-use/land-cover change-different methods and results***

***Chair: Q. Xu (Hebei University, workshop host, China)***

*10.15-10.45: Anthropogenic Land-Cover Change - J. Kaplan et al. (Switzerland)*

*10.45-11.15: Pollen-induced land-cover - S. Brewer et al. (USA)*

*11.15-11.45: Reconstructions based on historical and archaeological data - J. Myrdal (Sweden), B. Doolittle (USA), B. Woods et al. (USA)*

*11.45-12.15: general discussion on morning topic*

*12.15-13.30: Lunch*

#### ***2) Subcontinental land-use/land-cover change-different methods***

***Chair: M.-J. Gaillard (Sweden)***

*13.30-14.00: the Americas – pollen-inferred reconstructions - J. Williams et al. (USA)*

*14.00-14.30: Europe - pollen-inferred reconstructions - A.-K. Trondman et al. (Sweden)*

*14.30-15.00: China – a survey of land-use/land-cover change reconstructions and related pollen-vegetation calibration studies - Q. Xu et al., Hebei Normal University, Shijiazhuang, M. J. Bunting and Zhou Liping et al., Peking University, Beijing*

*15.00-15.30: Russia – pollen-inferred reconstructions - P. Tarasov (Germany)*

*15.30-16.00: Coffee Break*

***Session 2: Discussion on potentials and limits of different methods and how to integrate these***

***Chair: J. Williams (USA)***

***Secretary: Zhou. Liping (China)***

16.00-17.00: Three discussion themes for group discussions

1. Potentials and limits of Anthropogenic Land Cover Change (ALCC) scenarios
2. Potential and limits of Historical and Archeological methods
3. Potential and limits of Pollen-inferred land-cover change

17.30-18.00: Reporting back

17.30-17.40: Group 1

17.40-17.50: Group 2

17.50-18.00: Group 3

18.00-18.30: General discussion

19.00: Dinner

\*\*\*\*\*

**Day 2: October 10<sup>th</sup> 2012**

***Session 3: Human landscapes reconstructions in Eastern Asia and Databases for land-cover reconstructions***

***Chair: S. Sugita (Estonia)***

*NOTE: The aim of the session is to get the community of researchers in Eastern Asia to present in collaboration the present status of research on Holocene land-use/land-cover change and pollen calibration, as well as pollen databases in their countries.*

a) China

8.30-9.00: Western/northern China - ***Zheng Zhuo et al., Department of Geology, Zhongshan University, Guangzhou.*** Surface pollen database in China.

9.00-9.30: Southern China - ***Weng Chenyu et al., State Key Laboratory of Marine Geology, Tongji University, Shanghai.*** Pollen morphology database of China.

9.30-10.00: Eastern China - ***Liu Hongya et al., College of Urban and Environmental Sciences and MOE Laboratory for Earth Surface Processes, Peking University, Beijing.*** Relationship between pollen and vegetation in Northern China.

b) Japan

10.00-10.30: ***Hikaru Takahara, Kyoto Prefectural University***

10.30-11.00: Break

c) India

11.00-11.30: Southern India - ***A. Krishnamurthy et al., Institut Francais, Pondichery***

11.30-12.00: Northern India - ***Santosh Shah et al., BSIP, Lucknow***

d) Global pollen database

12.00-12.30: The Global Pollen database (E. Grimm)

12.30-13.45: Lunch

***Session 4: POSTER session I***  
***Chair: Q. Cui (Sweden/China)***

13.45-14.15: Poster presentations  
14.15-15.00: Poster session

*15.15 Departure for excursion*  
*15.15-19.00: Excursion (temple)*

*19.00 Dinner*

\*\*\*\*\*

**Day 3: October 11<sup>th</sup> 2012**

***Session 5: POSTER session II***  
***Chair: Laurent Marquer (Sweden/France)***

8.30-9.15: Poster presentations  
9.15-10.00: Poster session

***Session 6: Discussion on Databases and possible plans of a pollen database for Eastern Asia***

***Chair: A. Krishnamuthy (India)***      ***Secretary: E. Grimm (USA)***

10.00-10.30: Prepare discussion sessions and Plenum discussion on the following issues:

1. Continental Pollen Databases and their link to the Global pollen Database
2. Existing pollen databases in Eastern Asia: how to harmonise them
3. Other useful databases in Eastern Asia: what and how to use them in land-cover reconstructions

*10.30-11.00: Break*

11.00-12.30: Pollen database for Eastern Asia: how?

11.00-12.00: In groups

12.00-12.30: Reporting back

12.00-12.10: Group 1

12.10-12.20: Group 2

12.20-12.30: Group 3

*12.30-13.30: Lunch*

***Session 7: Discussion on “Action Plan” for Holocene land-cover reconstructions in Eastern Asia***

***Chair: Zhou Liping (China)***

***Secretary: J. Williams (USA)***

13.30-15.00: Three discussion themes for group discussions

1. Pollen productivity estimates and fall speed of pollen in Eastern Asia: status and harmonizing the methods – suggestion of action plan
2. Improving ALCCs in Eastern Asia:how?- suggestion of action plan
3. Integrating all land-cover reconstructions/scenarios: how? suggestion of action plan

*15.00-15.30: Break*

*15.30-16.00: Reporting back*

*15.30-15.40: Group 1*

*15.40-15.50: Group 2*

*15.50-16.00: Group 3*

***Session 8: General discussion and decisions on Action Plan***

***Chair: M.-J. Gaillard (Sweden)***

***Secretary: J. Kaplan (Switzerland)***

16.00-16.30: General discussion – brain-storming

*16.30-17.30: Action Plan*

*17.30-18.00: Conclusions*

***Departure: October 19<sup>th</sup>***