

An aerial photograph of a rural landscape in Belgium, showing a patchwork of agricultural fields, a small town with buildings, and a road network. The terrain is slightly hilly. The text is overlaid on the image in a dark blue, bold, serif font.

**Proxy System modelling and data
assimilation in paleosciences,**

**Louvain-la-Neuve, Belgium, May 29-
June 1 2017**



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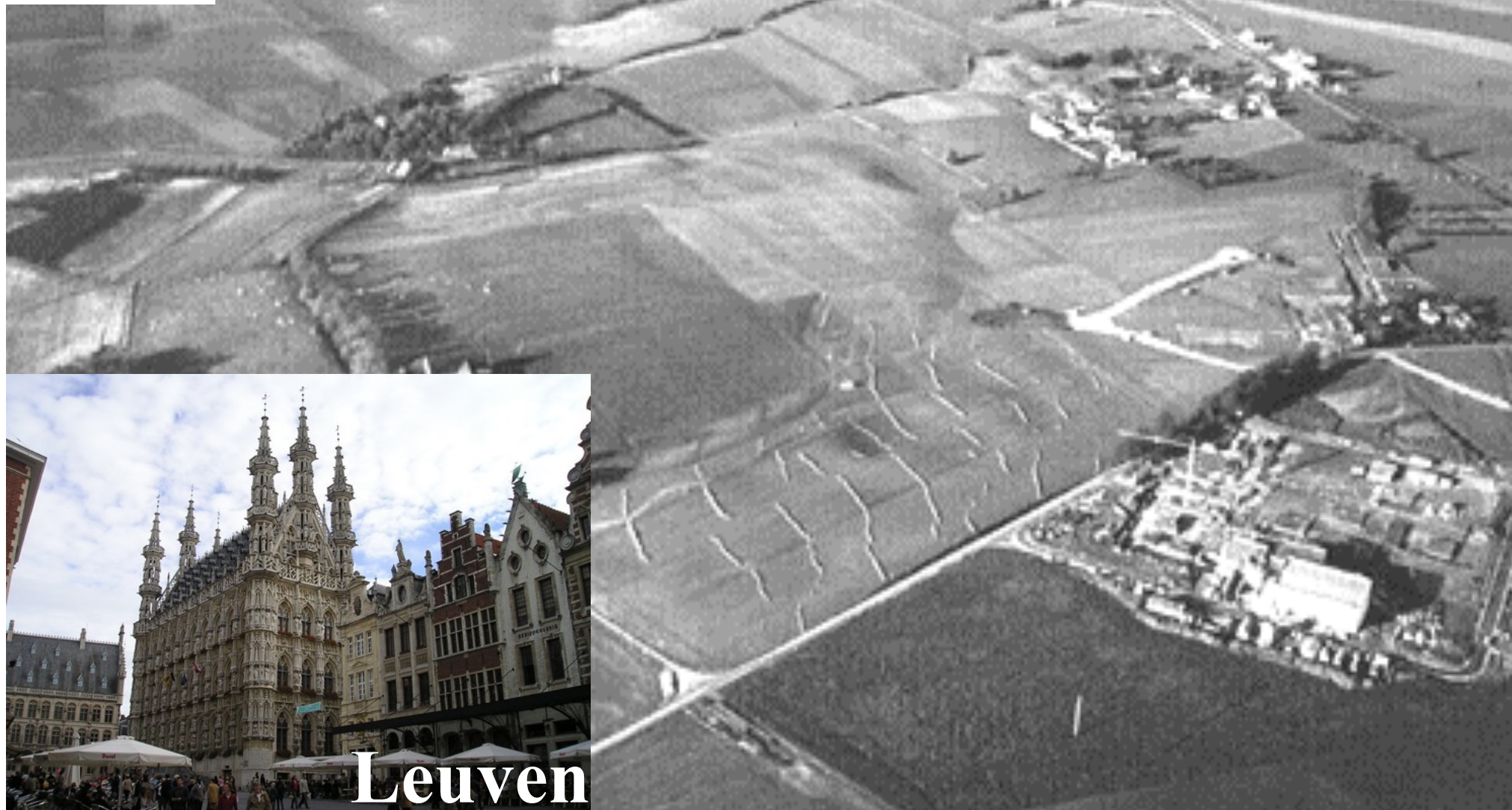
Université
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Leuven



PAGES is an international organization funded by the US National Science Foundation and Swiss Academy of Sciences.

It is a core project of Future Earth and a scientific partner of WCRP.



PAGES' Working Groups are temporary organizations that bring paleoscientists together to target specific aspects of PAGES scientific agenda that cannot be addressed by a single team.



DAPS - Paleoclimate Reanalyses, Data Assimilation and Proxy System modeling

Current steering group ([open](#))

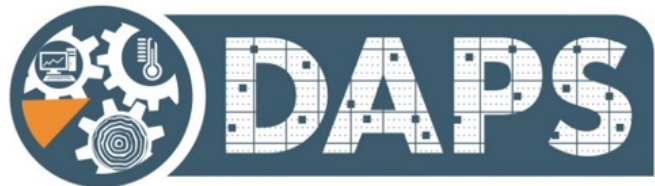
Hugues Goosse (Université catholique de Louvain, Belgium)

Mike Evans (University of Maryland, USA)

Samar Khatiwala (Oxford University, UK)

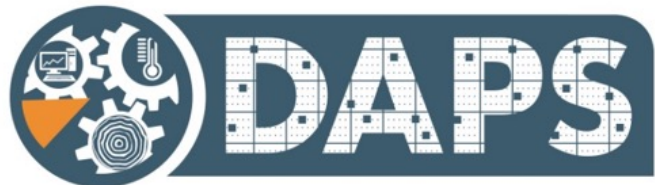
Objectives of DAPS

- Review and evaluate existing methodologies.
- Develop synergies and joined activities where gaps are identified.
- Provide practical applications and training to potential users.
- Stimulate the expansion of proxy system modeling and data assimilation in new areas.



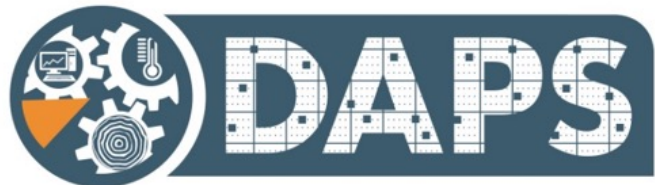
Links of DAPS with other activities

- Other PAGES WGs: PAGES2K, SISAL, VICS, OC3
- PMIP
- Modern data assimilation and reanalysis community (WCRP)



Objectives of this meeting

- Propose an overview of current activities in Paleoclimate Reanalyses, Data Assimilation and Proxy System modeling.
- Identify key applications demonstrating the interest of the approach and can be used easily by a wide group of scientists
- Stimulate new activities and collaborations, in particular through training.

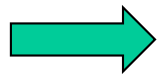


Objectives of this meeting

- Propose an overview of current activities in Paleoclimate Reanalyses, Data Assimilation and Proxy System modeling.

Talks day 1-2

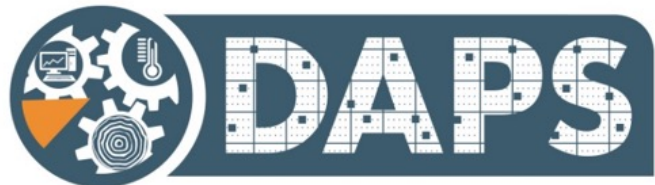
- Identify key topics and applications, demonstrating the interest of the approach and can be applied easily by a wide group of scientists



Working group discussion PLAN FOR ACTIONS

- Stimulate new activities and collaborations, in particular through training.

Practicals day 3-4



Plan for future activities

Classical PAGES WG products: data base, review papers, special issues

A bit different for DAPS (examples):

- Intercomparison of methods
- Code repository
- Specific applications that can be widely used
- Review paper / perspective

+ Meeting report



Program

- **Day 1. Overview talks**
- **Day 2. Short talk and working group discussions**
- **Day 3. Preparation of future work and synthesis**
- **Day 3-4. Practicals**

Practicals

Wednesday May 31 Afternoon

14.00-17.30 Demonstration of Prysm (climate proxy system modeling tools in python) and practical applications (Room Vinci)

Thursday Jun 1

9.00-12.30 Parameter and state estimation using a classical energy balance model (Room Vinci)

or Ecophysiological modeling of tree primary production and carbon allocation with MAIDEN (Room Mercator 3rd floor)

14.00-17.30 Reconstructing surface temperature over the last centuries using off line data assimilation (Room Vinci)

Practical information

- **The coffee and lunches planned in the program will be served in the main entrance area.**
- **Eduroam is working, an individual code for wifi access is available for the ones who need it.**
- **If you agree, we plan to share the presentation on the Google Drive**
- **The talks will take place in room MERC 04. Some additional rooms are available for the working group discussions.**
- **The ice breaker toady (5.30 pm) is also planned in the main entrance area. Dinner tomorrow is at 7 pm.**
- **Reimbursement form**

Themes for the group discussions

General questions

- What can groups working toward different products, realms and resolutions learn from each other?
- What are the key science questions and processes we should address as a group?
- Which tracers and/or proxy system models should be prioritized for standard and general use in the community?
- What initiatives would most improve proxy system models, paleoenvironmental data assimilation and their applications?
- What are the next steps for DAPS?

Themes of the group discussions

Specific applications

- Which examples could demonstrate the utility of proxy system modelling/ data assimilation to a wide community?
- Which common work would be helpful for the community of scientists already working on data assimilation and proxy system modelling?
- What would an idealized (practical) code and data platform look like? What are the most important shared or common elements? What elements should be developed separately?
- Do we need to define standards for input/outputs?

Synthesis

- ??

Next meeting ?

- **Organisation of virtual meetings for specific subgroups**
- **Dedicated DAPS meeting : when, which topic(s), which goal.**
- **EGU/AGU session**
- **Linked to another meeting.**

Suggestions

- **Didier Swingedouw: a group on ocean for different timescales**
- **Pascale Braconnot: assimilation to reconstruct vegetation (link PMIP4)**