3rd NECLIME Workshop on Digital Plant Distribution

Stratton Audley, UK, Nov. 20-22, 2014

- Circular -

Organizers: R.A. & T. Spicer, A.A. Bruch, T. Utescher

Outline

Other than extinct climates whose existence is still doubtful, there is clear evidence for past time periods with substantially raised atmospheric CO_2. As demonstrated by experiments, the atmospheric CO_2 level may modify the relationship between climate (precipitation / frost tolerance) and hence potentially has an impact on presence /absence of plant species as can be demonstrated in model projections. Hence, it could be argued that the climatic requirements defined for extant plants are only valid under atmospheric CO_2 close to modern.

On the other hand it is unclear, if the above observations regarding the effects of CO_2 are transferable on the long term. Plants have the ability to adapt and to moderate growth and architecture under different environmental constraints. Therefore it could be assumed that errors in palaeoclimate reconstructions introduced by CO_2, if any, are fairly minor and presumably impact only the reconstruction of precipitation, essentially in areas where water is the main limiting factor, where the change in stomatal conductance induced by CO_2 increase is expected to have the largest effect on the plant-water relationship.

The role of CO_2 in palaeoclimate reconstructions from the plant fossil record were addressed in more detail on this 3rd NECLIME Workshop on Digital Plant Distribution. Based on the contributions and considerations made in the discussion It was concluded that palaeoclimate reconstructions for time-spans with high atmospheric CO2 might be biased, mainly with respect to palaeoprecipitation. The high precipitation levels reconstructed for several time-spans of the Palaeogene might be overestimated. Joint studies including proxy data interpretations and modelling are appointed in order to substantiate this assumption.

Programme

Thursday, November 20

afternoon: arrival

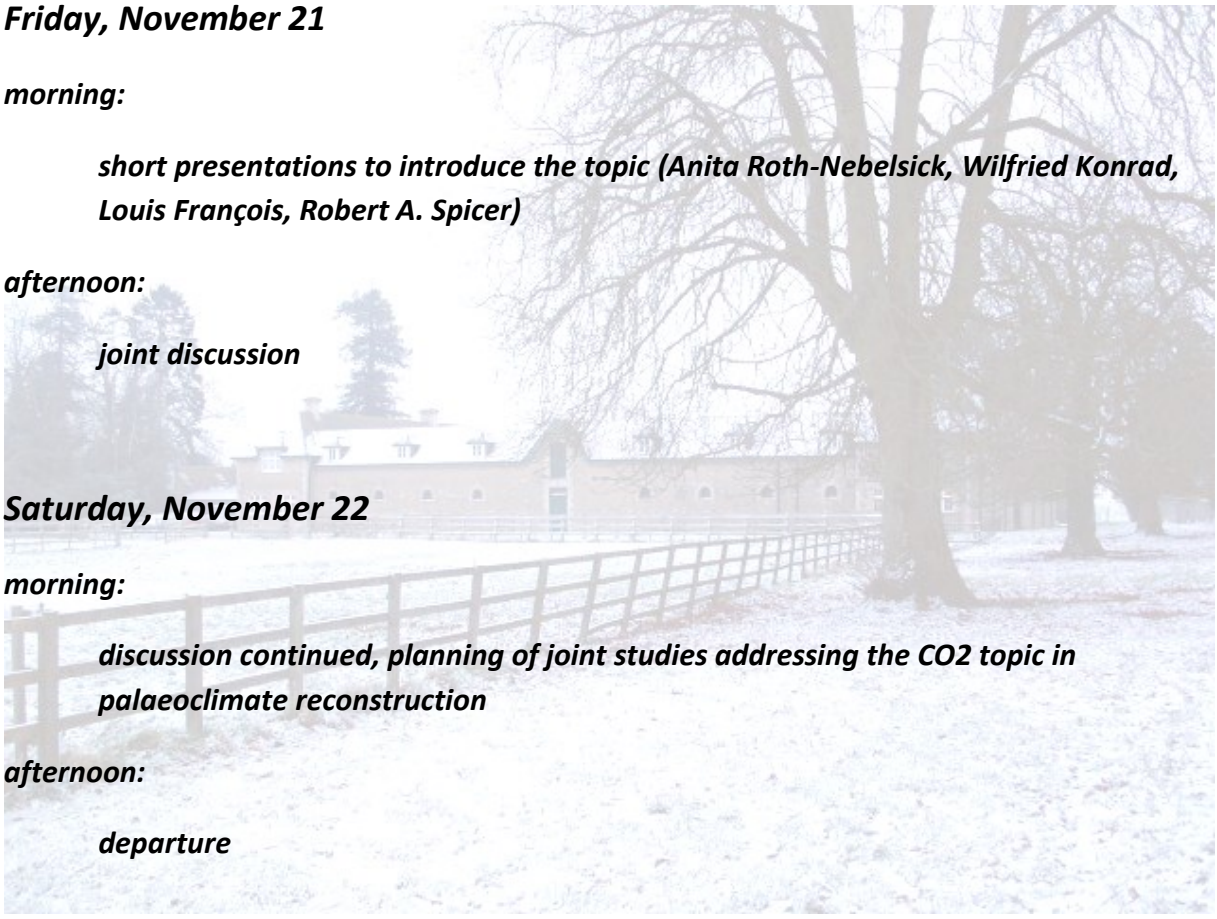
Friday, November 21

morning:

short presentations to introduce the topic (Anita Roth-Nebelsick, Wilfried Konrad, Louis François, Robert A. Spicer)

afternoon:

joint discussion



Saturday, November 22

morning:

discussion continued, planning of joint studies addressing the CO2 topic in palaeoclimate reconstruction

afternoon:

departure

Venue

The workshop is held at the Orchard Cottage, Teresa and Bob Spicers home.

List of anticipated participants

Anita Roth-Nebelsick (Stuttgart)

Wilfried Konrad (Tübingen)

Louis François (Liège)

Angela Bruch (Frankfurt)

Torsten Utescher (Frankfurt/Bonn)

Teresa and Bob Spicer