We plan a Copernicus Special Issue

with the following focus

Understanding past climate variability to enhance future climate-change projections

The period since the last interglacial featured a large range of climate variations. The range of of climate variations from the last interglacial, through the last glacial to the present provides opportunities to assess and improve comprehensive Earth system models. Models that can successfully simulate climate variations during the last glacial cycle, might enable us to more reliably assess future climate changes. More specifically, models tested against the paleoclimate record can inform, for example, about a regime shift in climate variability or the occurrence of abrupt events during the next centuries and millennia in response to global warming. Examples of other pressing questions are: could polar ice sheets collapse catastrophically and how quickly can sea level rise under present and future climate conditions? Or, what is the fate of permafrost in a warming world?

In this framework we will invite contributions on the following topics:

- Improvement of Earth-system models to more reliably project future climate over the next centuries and millennia
- Multicentennial-to-multimillennial transient climate simulations with comprehensive Earth-system models for the past and future
- Proxy-data systhesis for the time period since the last inglacial to assess Earth-system models
- Assessing climate stability and feedback mechanism (including climate-carbon cycle interaction) since the last interglacial by means of comprehensive Earth-system models

For an regular please express you interest:

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