

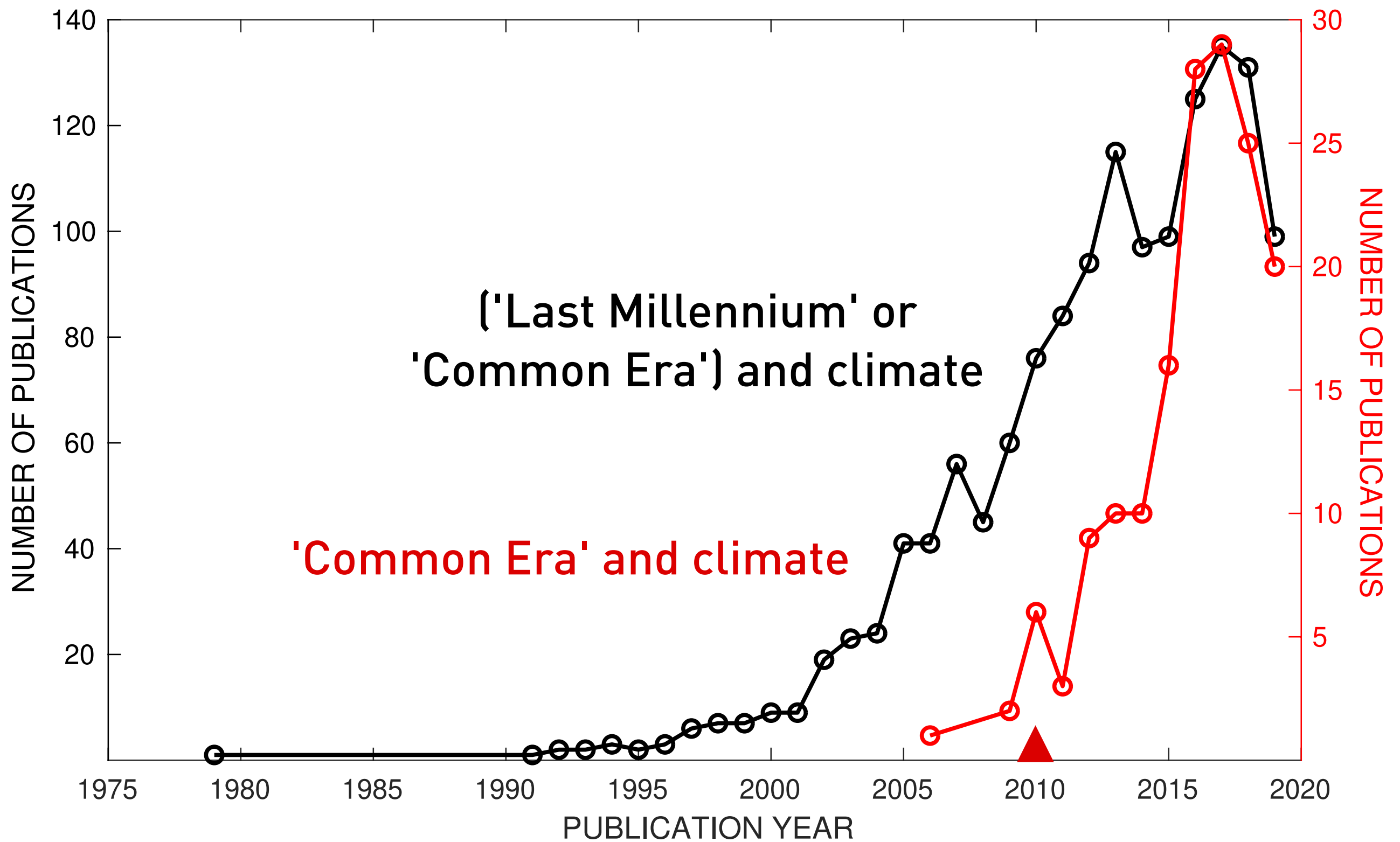
A retrospective on 10 years of the **Climate of the Common Era** sessions at AGU

Kevin Anchukaitis, Kim Cobb, Ed Cook,
Julien Emile-Geay, and Jason Smerdon

10th Anniversary of the 'Climate of the Common Era'
AGU Fall Meeting 2019, San Francisco, CA



'This session highlights recent work on all aspects of the climate of the last 2000 years (the Common Era)'



source: Web of Science

For 10 years **43 to 66**

abstracts every year for nearly

500 total papers and posters

over the last decade

integrated and comprehensive
understanding of proxy records,
proxy systems modeling,
reconstructions, statistics, model
simulations, internal and forced
climate dynamics, improving
forcing estimates

Towards a global synthesis of the climate of the last two millennia

Workshop of the PAGES 2k Regional Network – Corvallis, USA, 7 July 2009



LOUISE NEWMAN¹, H. WANNER² AND T. KIEFER¹

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'We still do not sufficiently understand the precise sequence of changes related to regional climate forcings, internal variability, system feedbacks, and the responses of surface climate, land-cover, biosphere and hydrosphere [during the last 2000 years]'

Reconstructions of paleoclimate: Beyond the hockey stick

Doug Nychka and Bo Li (invited)

Fall Meeting 2010

Piecing together the past: Statistical insights into paleoclimatic reconstructions

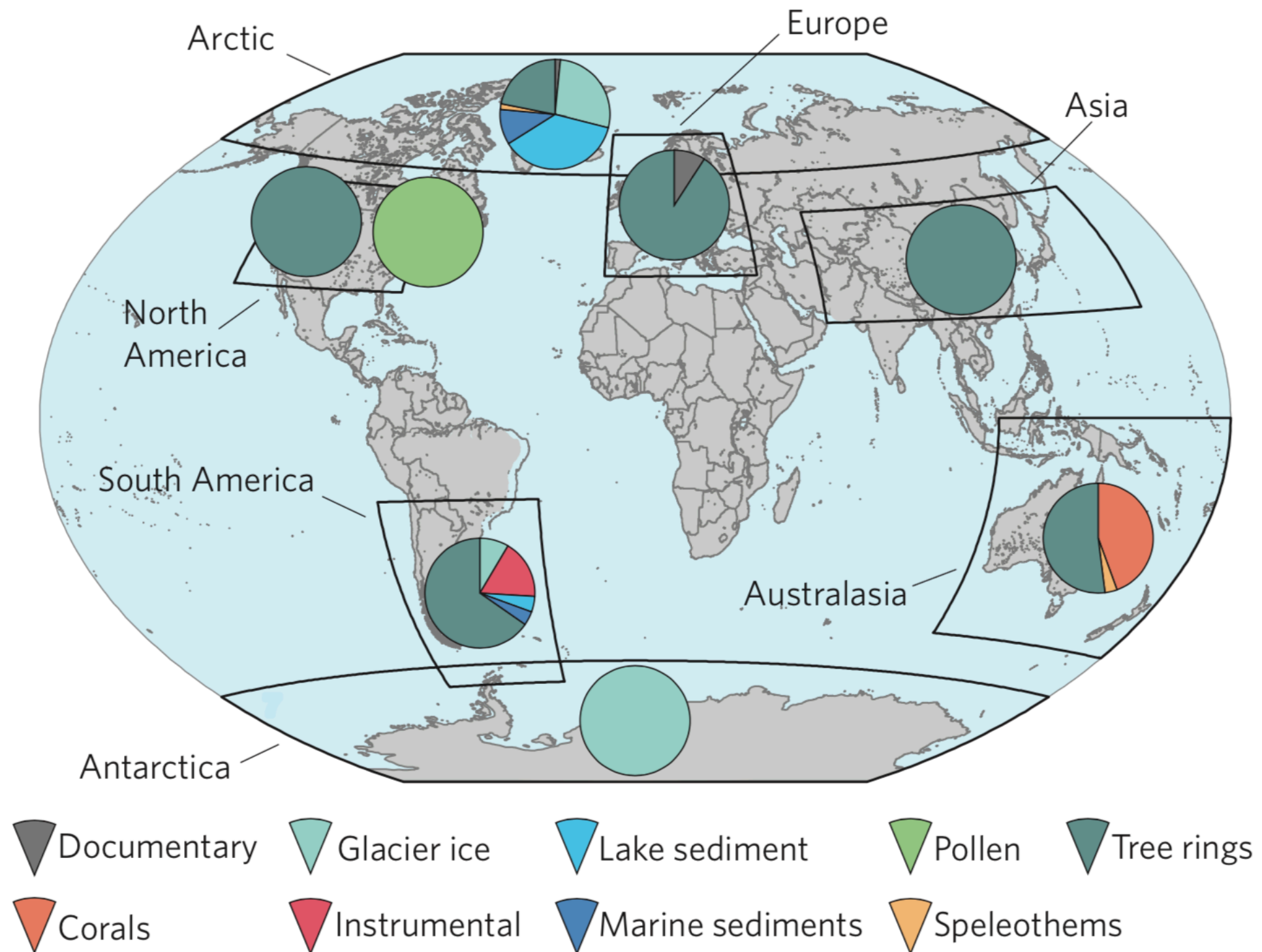
Martin Tingley and coauthors

Fall Meeting 2010

Fragility of estimated spatial temperature patterns in climate field reconstructions of the Common Era

Jianghao Wang et al.

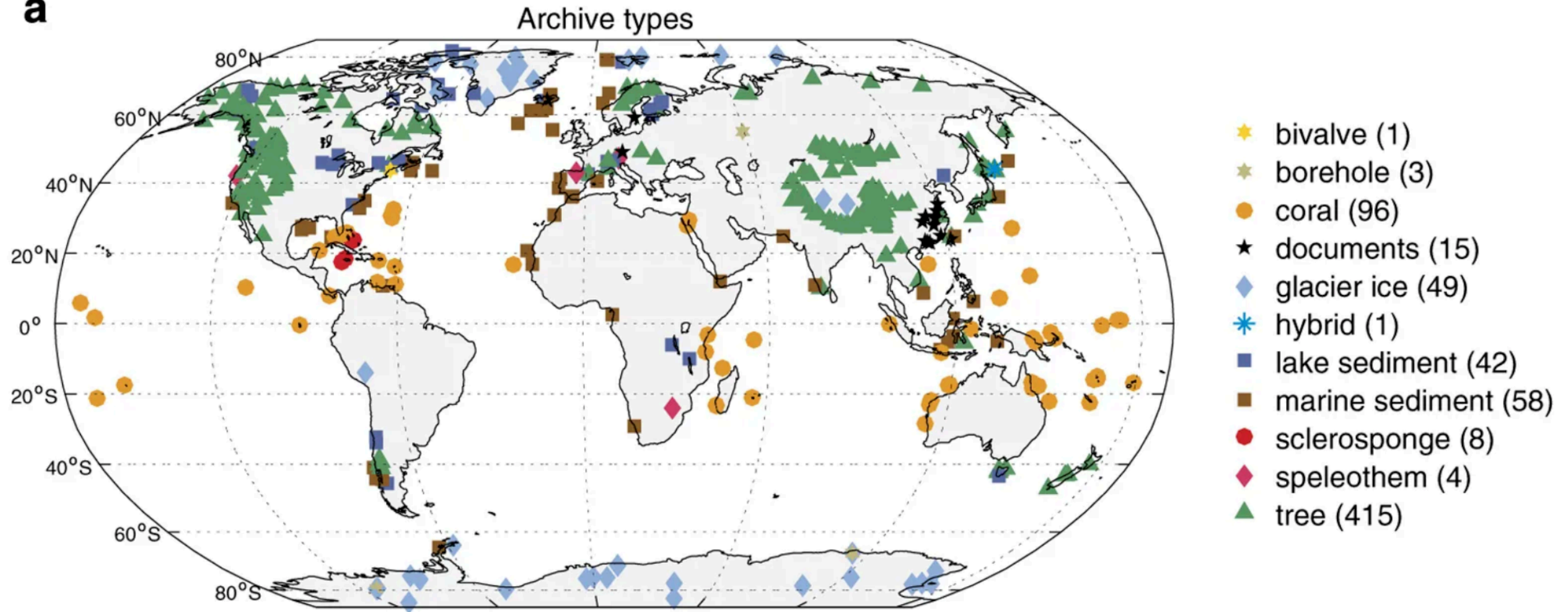
Fall Meeting 2013



PAGES2k Network, *Nature Geoscience*, 2013

PAGES2k 2.0.0 (692 records from 648 sites)

a



PAGES2k Consortium (Emile-Geay et al.)
A global multiproxy database for temperature
reconstructions of the Common Era,
Scientific Data, 2017

Continental-Scale Temperature Reconstructions from the PAGES 2k Network

Darrell Kaufman
Fall Meeting 2012

The PAGES 2k Global Multiproxy Database for Temperature Reconstructions of the Common Era

Nick McKay, Julien Emile-Geay et al.
Fall Meeting 2015

First-order results from the PAGES/Ocean2k project

Helen McGregor, Mike Evans, PAGES2k Oceans2k
Fall Meeting 2012

Antarctic climate and ice sheet changes and their relationship to global scale climate change over the last 2000 years

Eric Steig and Antarctica2k (invited)
Fall Meeting 2012

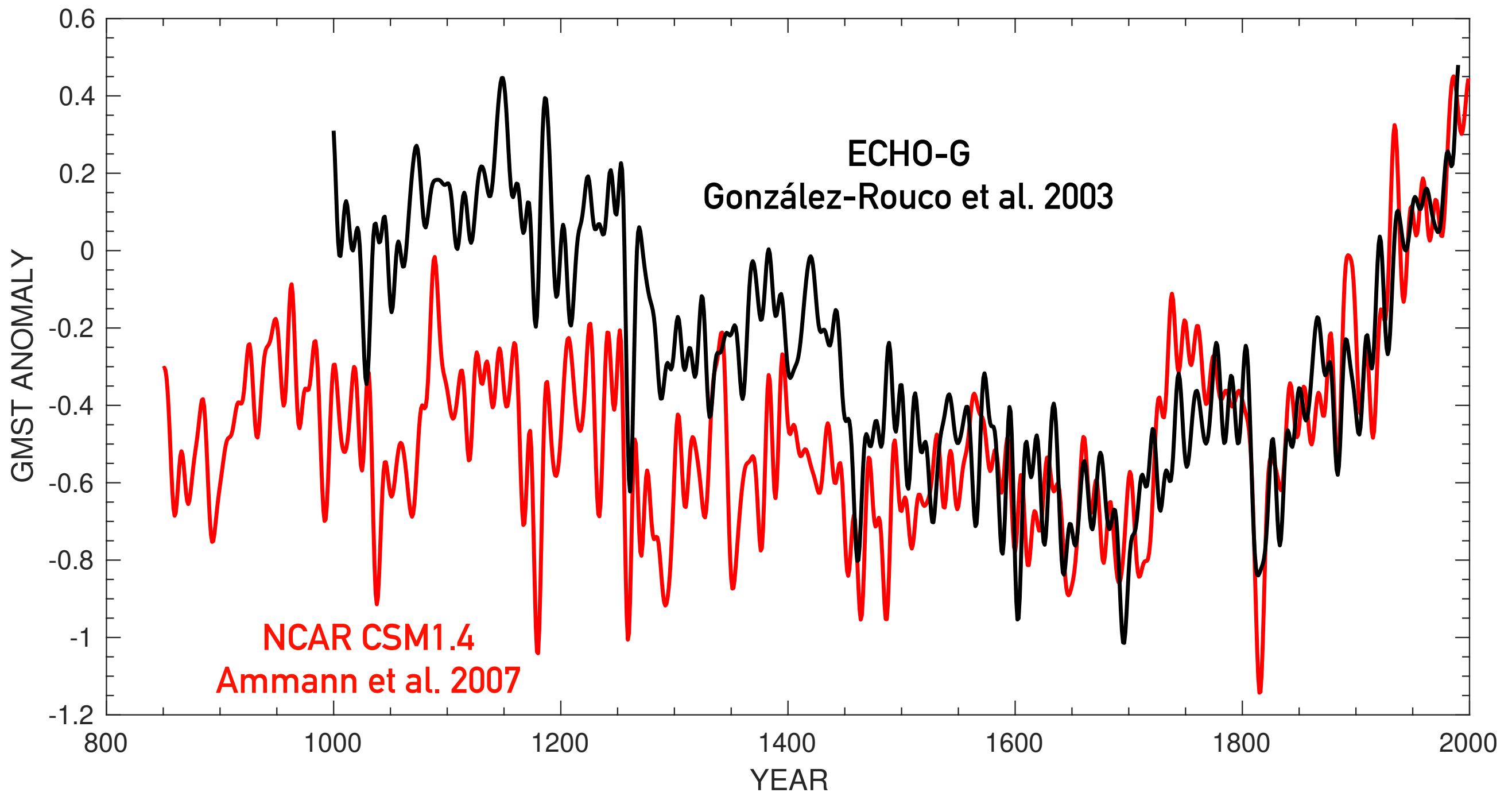
A New Bayesian Gridded European Summer Temperature Reconstruction from the PAGES 2k Regional Network and Comparison to Millennium-Length Forced Model Simulations

EuroMed2k
Fall Meeting 2012

Climate of the past 2000 years in IPCC AR5

Valerie Masson-Delmonte (invited)
Fall Meeting 2013

'Paleoclimate in everything'
(IPCC AR6)



Limited last millennium climate model simulations against which to evaluate or compare climate reconstructions

Simulation of climate and carbon cycle variability over the last millennium

Victor Brovkin, Johann Jungclauss (invited)

Fall Meeting 2010

Forcings over the last millennium: Uncertainties and modelling strategies

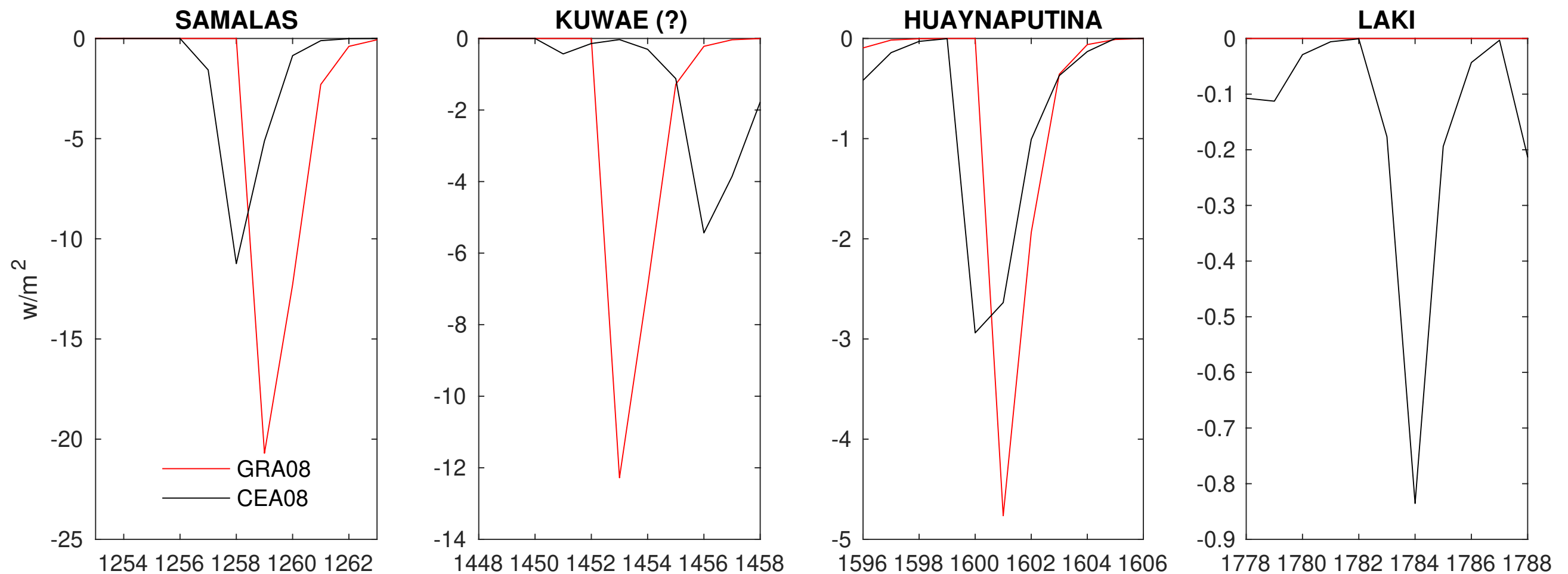
Gavin Schmidt (invited)

Fall Meeting 2011

A Last Millennium Ensemble Study with the Community Earth System Model

Bette Otto-Bliesner (invited)

Fall Meeting 2013



volcanic forcing estimates

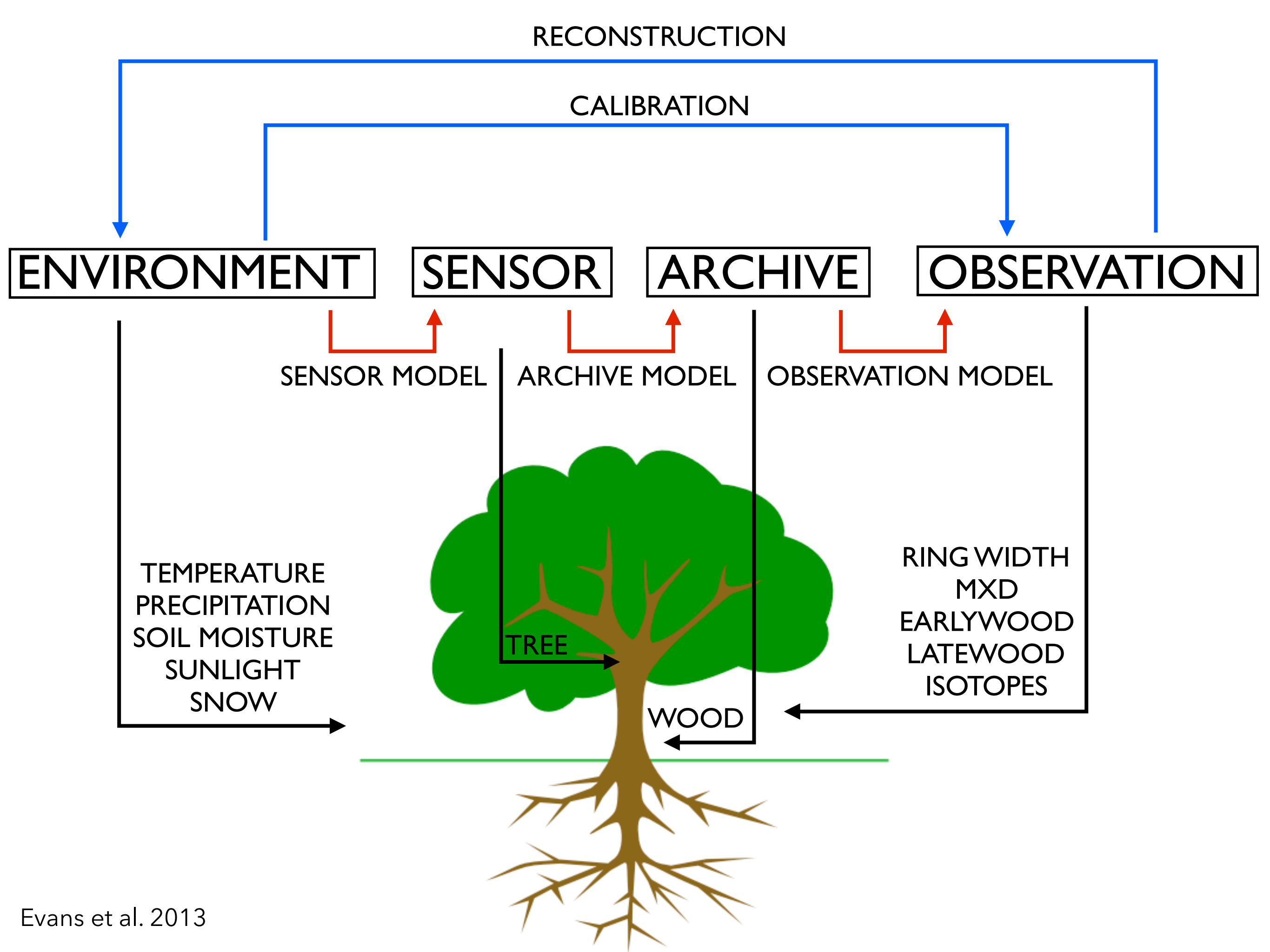
(Gao et al. 2008, Crowley et al. 2008, Schmidt et al. 2010)

Volcanic forcing during the Common Era reevaluated based on new ice core evidence

Michael Sigl et al.
Fall Meeting 2013

Key drivers of climate change over the last millennium

Gabi Hegerl et al.
Fall Meeting 2016



Probabilistic reconstructions of
bivariate climate using a biologically-
motivated model of tree-ring width

Suz Tolwinski-Ward et al.

Fall Meeting 2011

Reducing uncertainty in the climatic
interpretations of speleothem $\delta^{18}\text{O}$

Catherine Jex et al. (invited)

Fall Meeting 2013

Looking forward to the next decade of Common Era paleoclimate

large ensembles of paleoclimate modeling over the full Common Era,
single forcing runs, more isotope-enabled Common Era simulations

enhanced proxy systems modeling and integration of PSM in models
and inverted for reconstructions, proxy monitoring and experiments

direct use or assimilation of paleoclimate data in decadal forecasting,
probabilistic predictions, and model ranking

new proxy collection and development in critical areas and time
periods & adoption of data standards to facilitate syntheses

continued genuine equitable collaboration and integration among
proxy development, modeling, climate dynamics, statistics
communities

a new era of the Climate of the Common Era sessions at AGU



Bethany Coulthard and Sloan Coats