

Climate simulation for the last millennium.

Implications for the Baltic Sea

Hans von Storch^{1,2} and Eduardo Zorita¹

¹ Institute for Coastal Research, GKSS Research Center, Geesthacht

² Meteorological institute, University of Hamburg

Modern climate models have matured so that they can be integrate over hundreds of years, exposed to estimated historical forcing functions in terms of volcanism, solar output and anthropogenic changes of greenhouse gases. Thus, an source of hypotheses about historical climate variations independent of conventional indirect evidence, derived for instance from characteristics of tree rings borehole temperatures, historical harvests and so on, has become available.

The millennial simulations serve two purposes. First to suggest quantitatively and in detail possible past climate states and variations. Second to test methods designed to reconstruct past climate states form indirect proxy evidence.

One such set of simulations, named Erik den Røde, has been integrated over the last 1000 years. It set-up and broad characteristics are presented; the implications for the Baltic Sea region; an example of dynamical downscaling for the Late Maunder Minimum is given. Also, the role of these simulations in overcoming the flawed idea of the hockeystick-like historical temperature development is sketched.