

**6<sup>th</sup> Study Conference on BALTEX**  
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## **Interference of climate change, geosphere and anthroposphere – a new focus of the Szczecin science community**

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It is widely accepted that spatial downscaling of global processes to the regional scale is needed to understand the general climate system through the functioning of its regional components. For this understanding key areas play a crucial role standing as zones of transition for high gradients of measurable meteorological, geological and socioeconomic parameters. The southern Baltic area can be regarded a key region in this sense as it covers the border between two major tectonic units – the Eastern and the Western European Platform; it serves as the transit areas for air masses driven by the deep pressure systems of the Northern Atlantic from the West and the Eurasian high pressures systems from the East. It also represents an important ecological gradient of the southern Baltic Sea coast as a transition from terrestrial to marine ecosystems. In terms of socioeconomics, the area is mainly characterized by the gradients between eastern and western Europe historically and still at the recent development. To answer the complex questions of climate dynamics of the southern Baltic Basin interdisciplinary and international research networks are required. The location of Szczecin at the German/Polish border and in the centre of the historical region of Pomerania qualifies site from the logistical and cultural point of view to host a cross-bordering European centre of sciences. As a first step in order to establish this centre in 2009 the University of Szczecin did host an international conference on “Climate Change – the socio-economic response in the southern Baltic region” (Witkowski et al. 2009). During that conference scientists from countries around the Baltic Sea did report about significant correlation between changing climate and the natural and socioeconomic systems under investigation. In order to explain this correlation by cause-effect relations a more intensive interdisciplinary

cooperation between geoscientists, archaeologist, sociologists, economists and climate researchers is needed. As a direct result of the conference in Szczecin a group of scientists have established an interdisciplinary research group at the University dealing with cause-effect relation of the dynamics of climate, terrestrial and marine ecosystems and socio-economic systems. It is planned to develop with regular interdisciplinary seminars the scientific environment for the establishment of an inter-institutional climate research centre focusing on three main topics:

- Marine and terrestrial and paleo-climate change,
- Climate related coastal dynamics,
- Climate and anthroposphere.

In the first stage of the research centre the institutes will work together based on a joint research program using existing resources. On the second stage personal and technical resources shall be upgraded by national and international funding in order to guarantee outstanding results in terms of innovative concepts and high qualitative experimental and monitoring data. The interdisciplinary exchange of ideas, concepts and data will be realized by a program that networks projects and disciplinary units in a matrix-like structure. Modelling procedures will serve for the space/time assignment of research results. The competence for the application of modern climate model concepts has to be developed at Szczecin.

International co-operation shall help to develop this competence. The cooperation with related research groups within the Baltic area and beyond is one of the prerequisites of a successful establishment of the research centre at Szczecin. On the local level the centre shall cooperate with local authorities and agencies in order to get spin-offs results for the direct practical use.

## **Reference**

Witkowski, A., Harff, J., Isemer, H.-J. (eds.)  
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Change – the socio-economic response in  
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