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New cutting-edge research centre to rise at the University of Konstanz

Research building programme makes new "Centre for Visual Computing of Collectives" possible.

A new cutting-edge research centre on swarm and collective behaviour will be established at the University of Konstanz: upon the recommendation of the German Council of Science and Humanities, the new "Center for Visual Computing of Collectives" (VCC) will be funded in the context of the research building programme of the federal and state governments. This research centre will bring together internationally-recognised experts from the fields of behaviour, computer graphics and data analysis. It will be located on the north side of the University of Konstanz. Through the analysis and visualisation of movement data of large groups of animals, the experts will establish new approaches to investigate swarm behaviour and group dynamics in animal groups. The research building committee of the Council of Science assessed the research centre as "outstanding". The overall costs for the VCC with floor space of around 3,000 square metres amount to 27 million euros.

The new VCC will be one the most advanced facilities globally for the study of animal groups, such as fish or insect swarms. In a world first, it will be possible to observe animals in reactive holographic 3D environments and to detect their movements in space and time in completely controlled naturalistic environments. Instillation of new imaging, sensor and transmitter technology, combined with high-performance computing, will facilitate fine-scale analysis of animal swarms and observation of global animal movement. With research infrastructure to analyse and visualise high volumes of movement data, the VCC will generate new insights into the study of group behaviour in animals.

"We are immensely proud and honoured that the Hector Foundation II contributed 6 million euros towards the construction of the VCC. Without their support, this centre would not have been possible" say Prof. Dr. Ulrich Rüdiger, rector of the University of Konstanz and Kanzler Jens Apitz. "Josephine and Hans-Werner Hector are long-standing supporters of our university and have an excellent sense for scientifically outstanding projects. By promoting the VCC, they create the basis for a new understanding of collective behaviour that can have broad applications, from the prevention of agricultural pest outbreaks to understanding the spread of disease to autonomously moving robots and vehicles," Rüdiger explains.

The joint exploration of collective behaviour by biologists and computer scientists is another example of the interdisciplinary approach of the University of Konstanz. The collaboration of behavioural biologists and experts of data analysis and visualisation opens new paths to answer highly relevant research questions. To place Konstanz at the forefront of research on collective behaviour, the University of Konstanz has been working with the Max Planck Society to attract internationally leading scientists working in this growing field, with Konstanz as their joint location for this venture.

Through its research building programme, the German government supports selected projects that promise to contribute excellent and outstanding science. The projects are evaluated in a competition by the Council of Science and selected according to scientific quality and relevance. The cost of approved research buildings is equally shared by the federal and state governments. In Baden-Württemberg, the state government's share is being divided between the state and the university.

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