

Towards Making InfoVis Views Tangible

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VISWEEK
2010

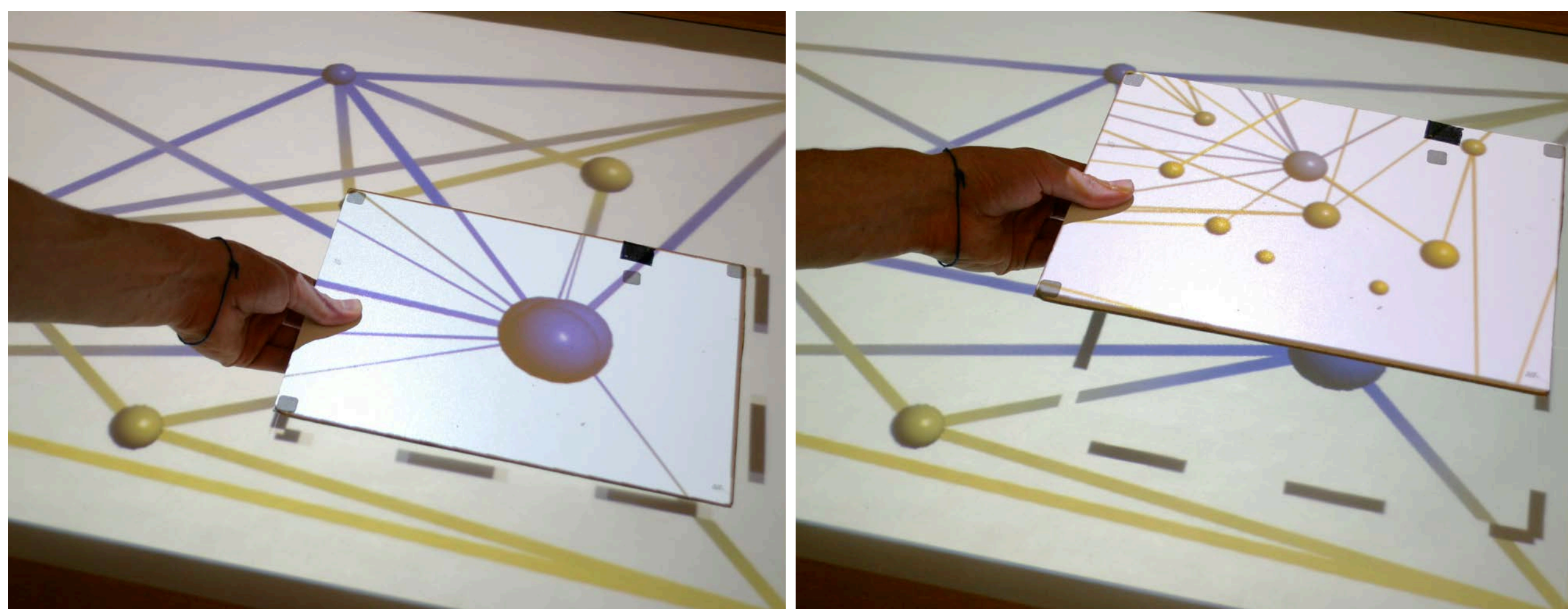
Abstract

In information visualization, interaction is commonly carried out by using traditional input devices, and visual feedback is usually given on desktop displays. By contrast, recent advances in interactive surface technology suggest combining interaction and display functionality in a single device for a more direct interaction.

With our work, we contribute to the seamless integration of interaction and display devices and introduce new ways of visualizing and directly interacting with information. For this purpose, we introduce tangible views as spatially-aware lightweight displays that can be interacted with by moving them through the physical space on or above a tabletop display's surface. Tracking the three-dimensional movement of tangible views allows us to control various parameters of a visualization with more degrees of freedom. Tangible views also facilitate making multiple views physically "graspable".

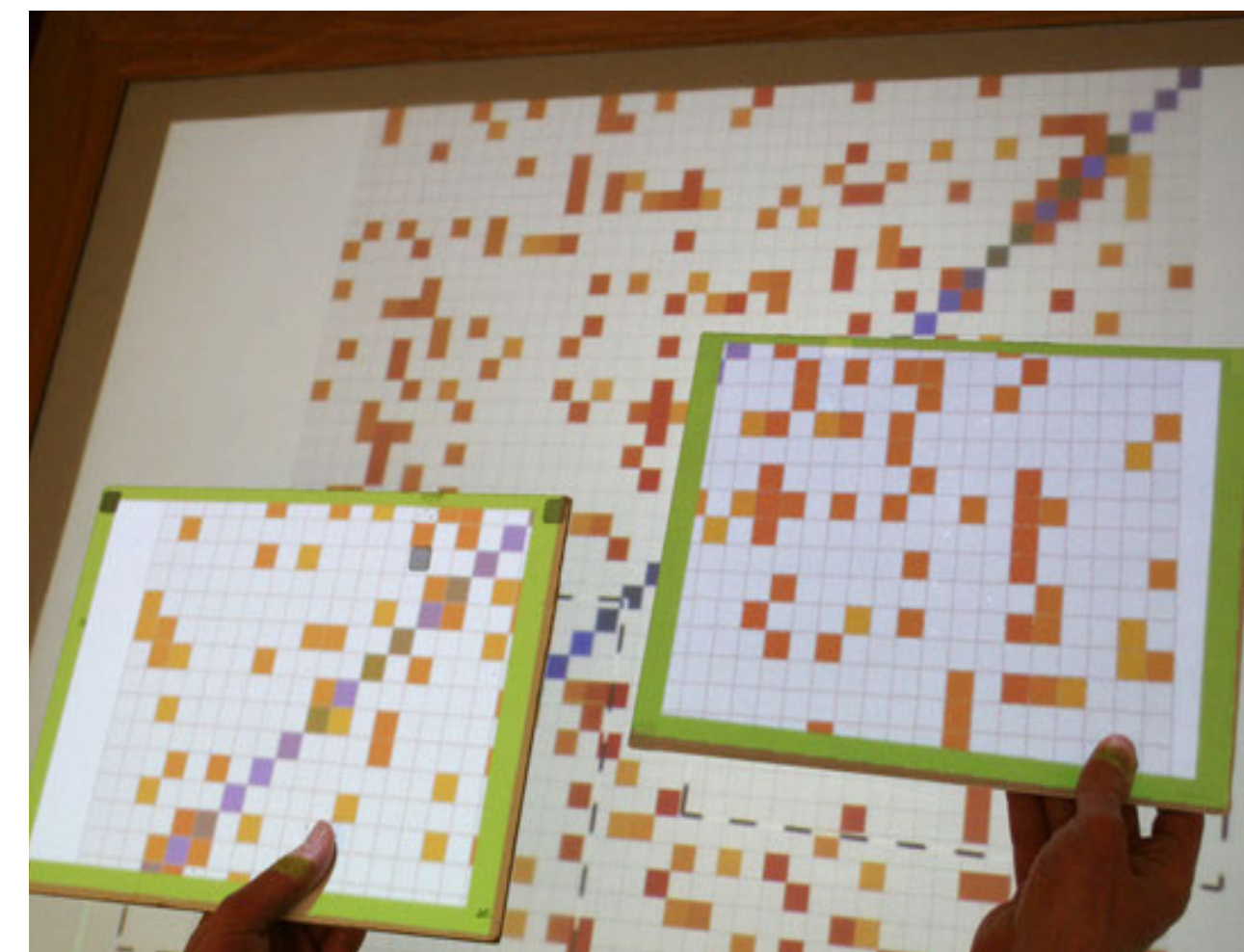
Graph Vis

A tangible variant of a abstraction lens to explore relations in node-link diagrams by using vertical translation.

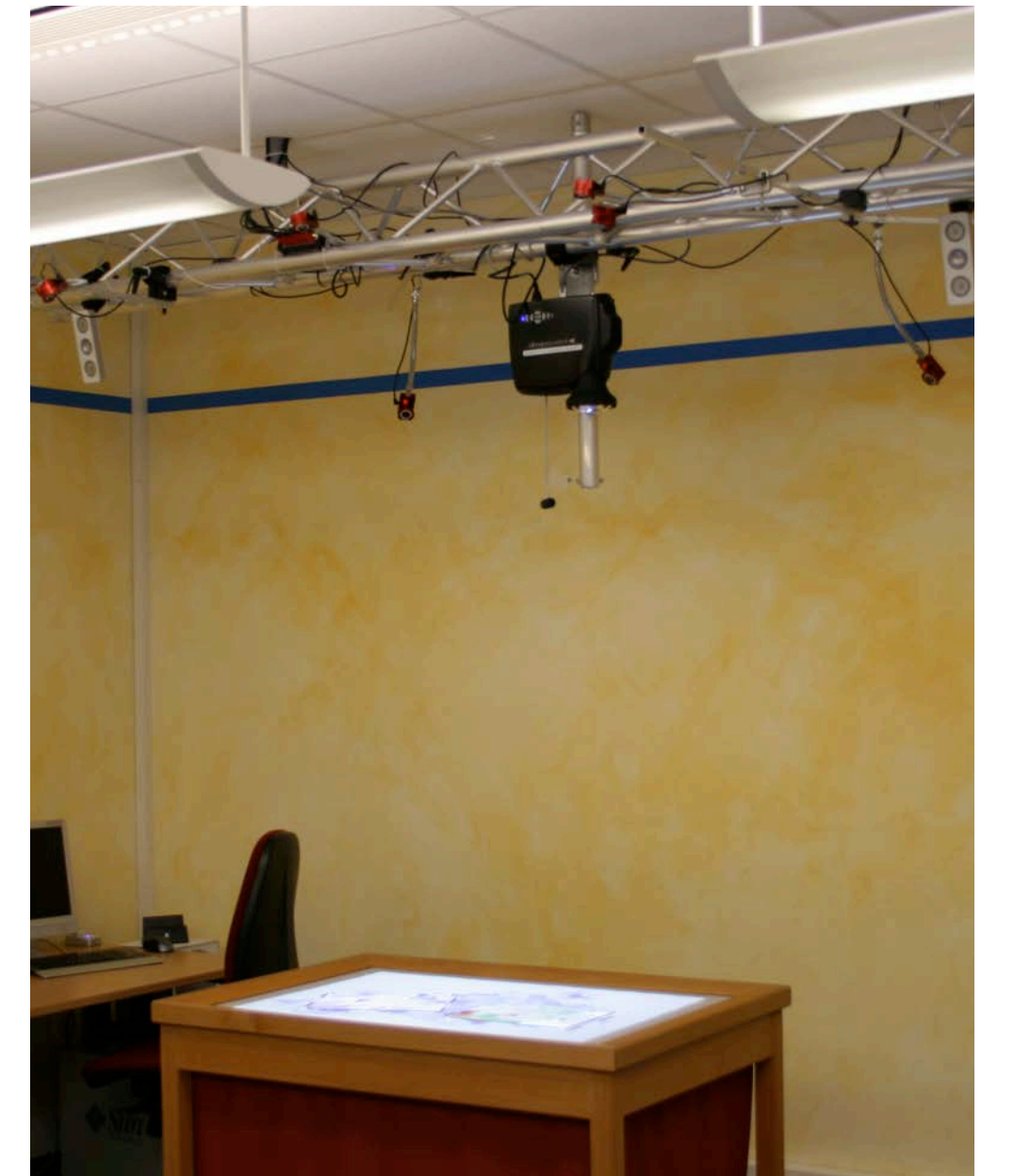


Matrix Vis

Visual comparison by using two tangible views.

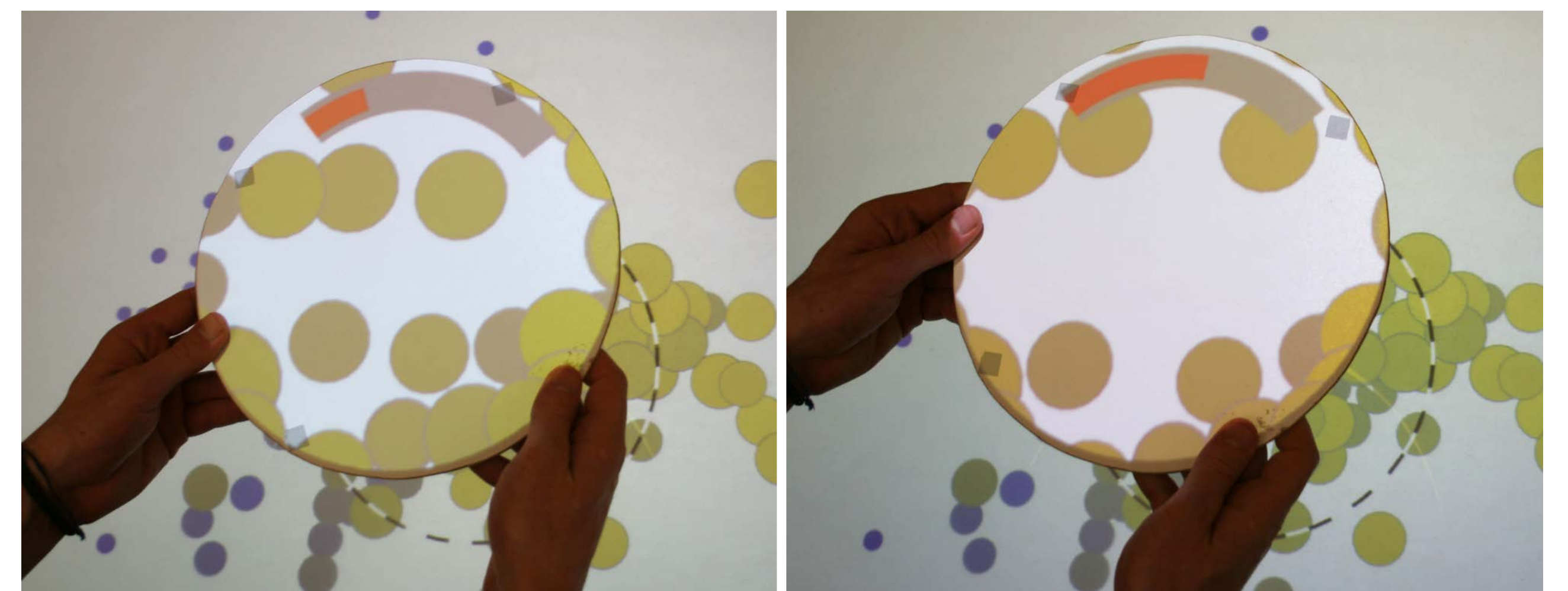


Tech. Setup



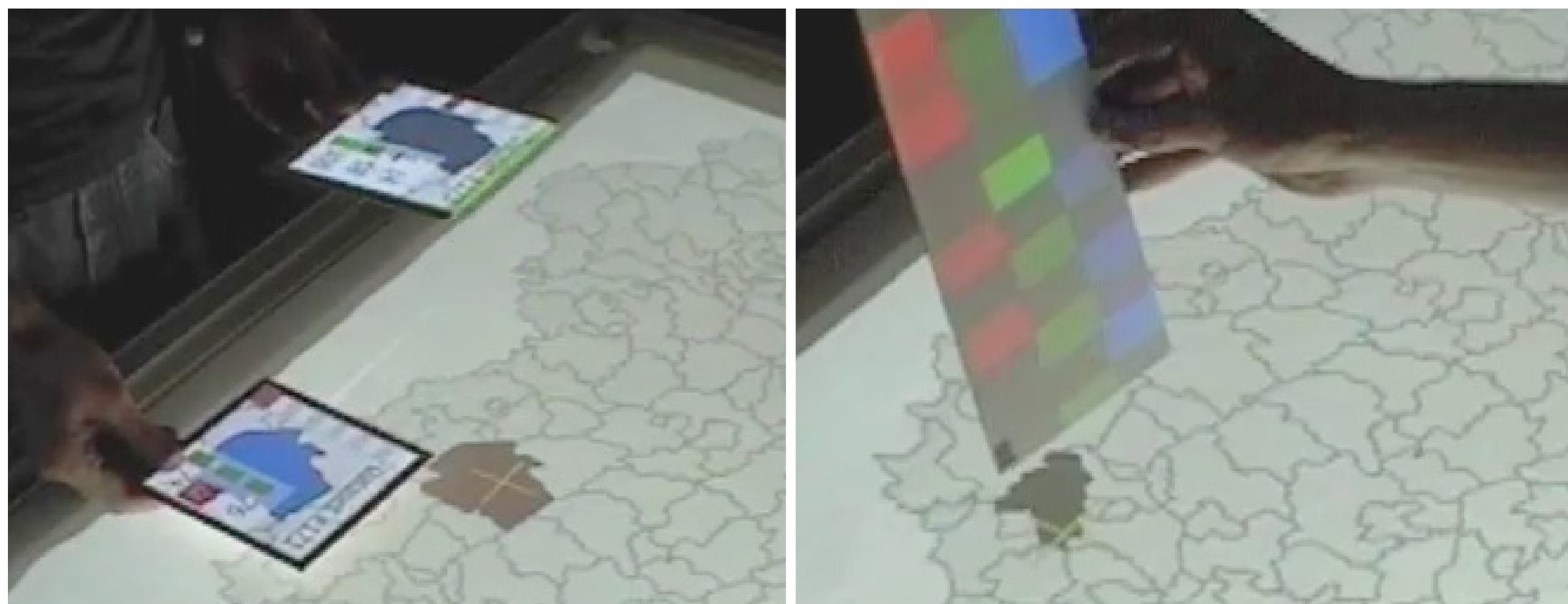
Scatter Plot

Circular fisheye lenses allow users to control the degree of displacement by using horizontal rotation.



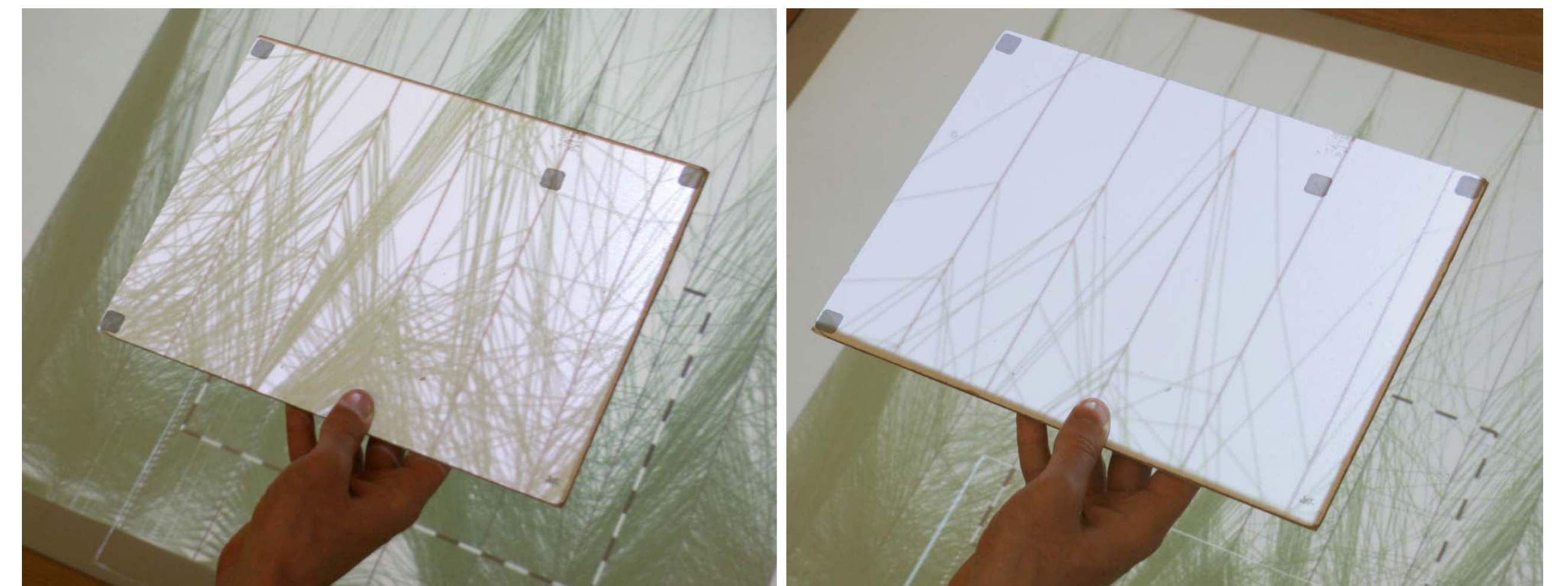
Space-Time-Cube Vis

The tabletop shows the spatial context (geographic map) and the time is mapped along the z-axis.



Parallel Coordinates Plot

Tangible sampling lenses support users in finding an appropriate sampling factor by using vertical translation.



Interaction Vocabulary

