

# 3D Environments on a 2D Touch Display

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March 21, 2011

For many scientific visualization problems, for example exploring astronomical data (Figure 1), it is helpful to be able to view and explore a 3D environment/dataset; a lot of information can be derived from these visualizations. In addition to Virtual Reality approaches and other stereoscopic visualization settings, e.g. CAVE [CNSD<sup>+</sup>92], people are also starting to explore the interaction using 2D touch-sensitive displays [YSI<sup>+</sup>10, Wil09, HtCC09].

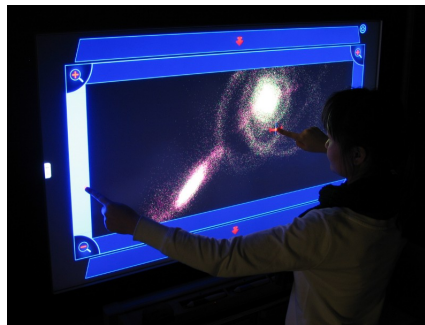


Figure 1: 2D interaction on a 3D dataset as used in FI3D [YSI<sup>+</sup>10]

We analyze four different interaction methods and identify several concepts. A concept is an abstract description of a certain way of interaction; e.g. camera manipulation or object manipulation. Our research focuses on the similarities and differences of these concepts. The aim is to identify specific challenges and evaluate how these are addressed in the different interaction methods. The result of our research is a list of heuristics that apply to 3D interaction on 2D touch displays; i.e. which concept works well in certain situations and why.

## References

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