Tablet-Based Interaction for Immersive 3D Data Exploration

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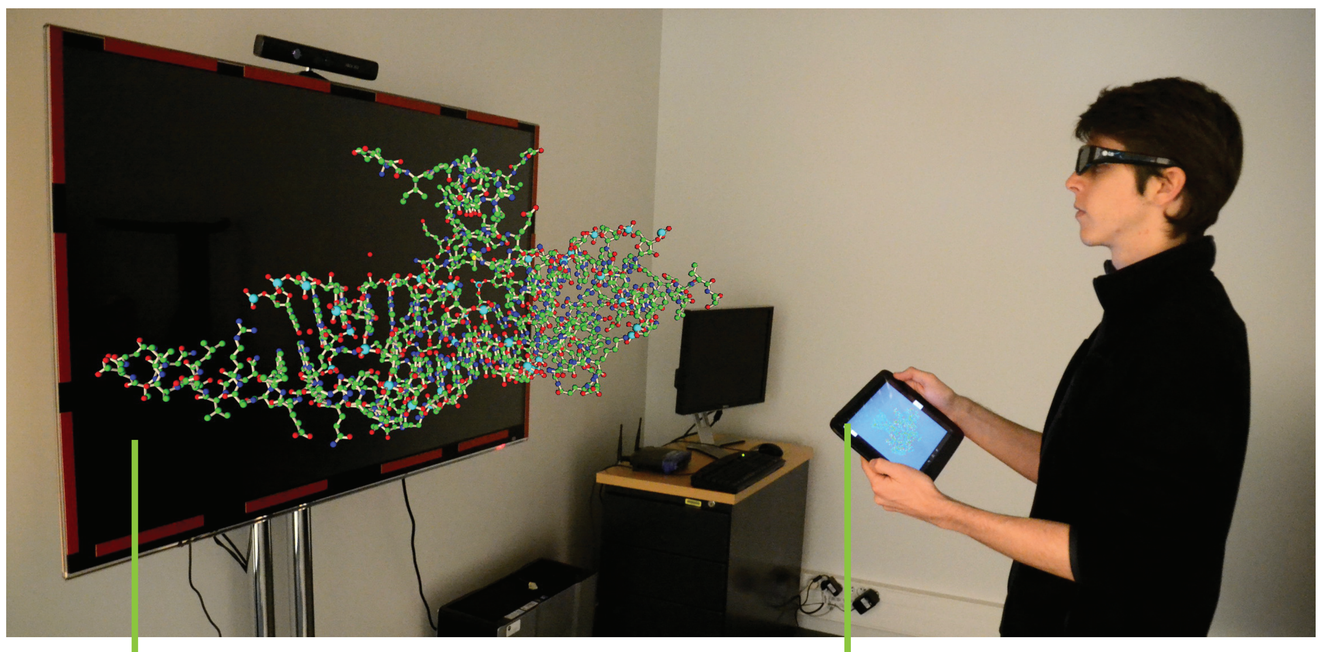
We explore interaction designs that allow people to view and explore immersive 3D data through tablet-based interactions. We explore the interaction design space introduced by combining the visual immersion of a large-scale stereoscopic view with immersion through input via interactions with a monoscopic tablet view.

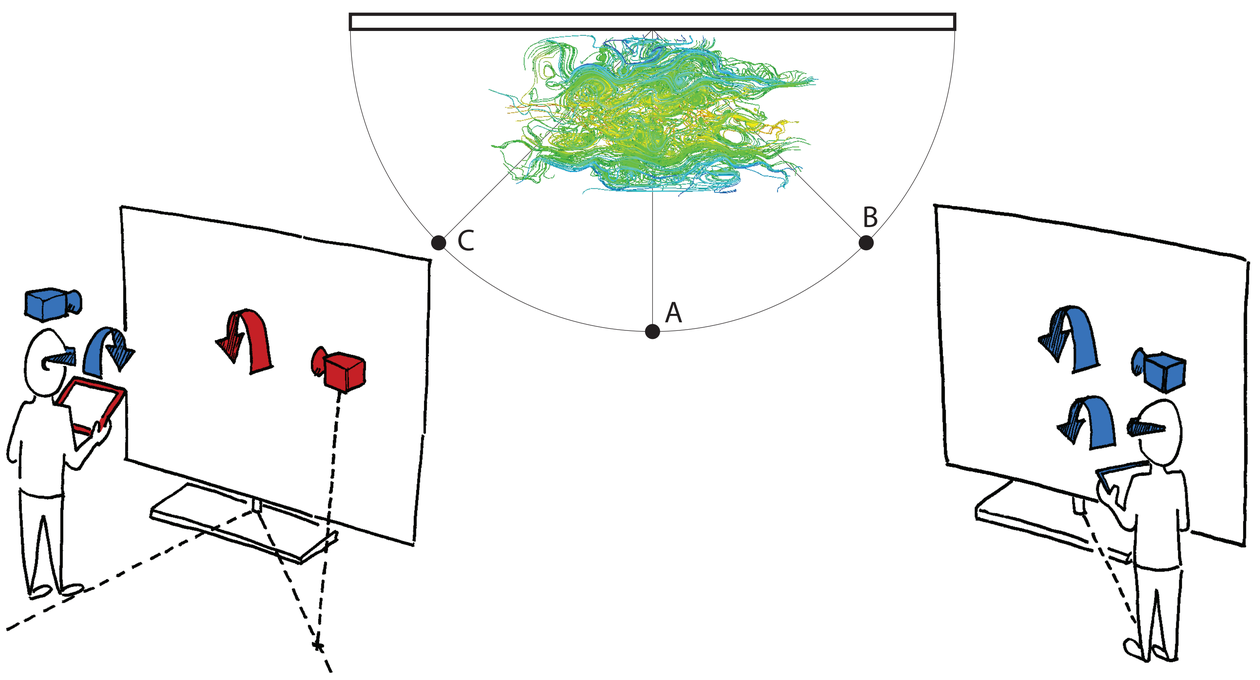


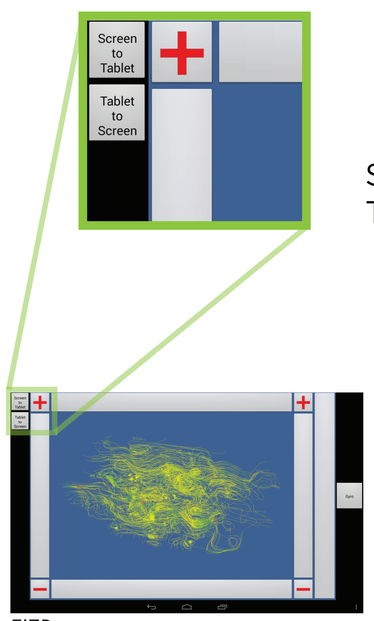
This setup lets people view and explore immersive 3D data through both movement around the large-scale stereoscopic data display and tablet-based interactions.

However, this setup can also lead to situations where the views on the tablet and the stereoscopic display are out-of-sync; this mismatched frame of reference makes navigation very difficult.

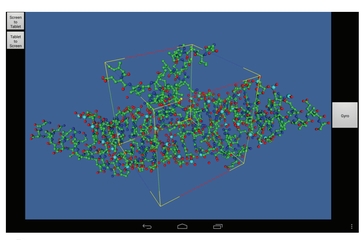
We present a workflow that includes simple synchronization features to restore consistent frames of reference.

Our workflow can be adapted to a range of tablet interfaces—we implemented both FI3D and tBox on the monoscopic tablet interface to demonstrate the range of touch-based interfaces that could apply to our interaction model.

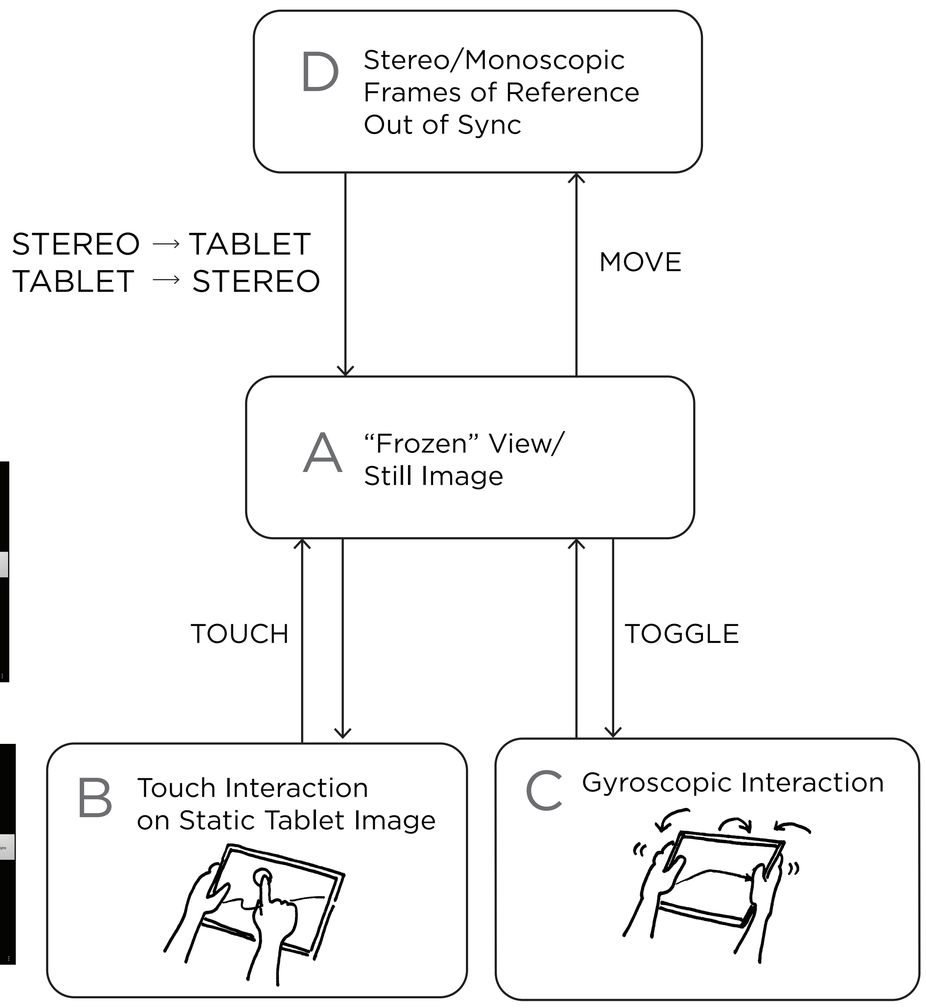




FI3D



tBox



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