Minimizing user movement with zoom in place

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Although Virtual Reality environments have seen slower adoption rates than expected among the medical community, throughout the last years, several new techniques have been developed that might boost the increase of popularity of these techniques and tools. However, the use of 3D environments is not exempt of some shortcomings, such as the difficulties of adaptation to 3D, that sometimes produce motion sickness, or the increase in effort the user has to develop when interacting with a 3D system, as compared to using a simple mouse on a desktop. Our proposal is tailored to focus on the second problem. More concretely, we propose a zooming technique that is able to reduce the movements required to explore a concrete part of a volumetric dataset as compared to other similar techniques. Our technique, Zoom-in-Place, builds the zooming result in the same virtual position of the initial interaction while still maintaining a contextual view on the region of interest and its surroundings. This way, the user reduces the amount of movements required to explore a model.

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