

In the past five years, my student (Lei Zhang) and I tried to behaviorally measure people' position (location) and heading (orientation) representations from their responses of pointing to distal buildings or replacing locations of proximal objects. Several colleagues asked me about the details of the methods. So I have uploaded the Matlab codes online to make the methods more accessible (see below). Please also see the attached papers for reference.

Cheers!

Weimin

**Method 1: calculate the homing error, position error, and heading error from the replaced objects locations of the path origin (O) and four proximal objects (X1 – X4) after walking an outbound path.**

Download the Matlab code here <https://doi.org/10.7939/R3FT8F06G>

Related papers:

Mou, W., & Zhang, L. (2014). Dissociating position and heading estimations: Rotated visual orientation cues perceived after walking reset headings but not positions. *Cognition*, 133(3), 553-571.

Zhang, L., & Mou, W. (2017). Piloting systems reset path integration systems during position estimation. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 43(3), 472.

**Method 2: calculate participants' position and heading estimates from their pointing to five distal buildings.**

Download the Matlab code here <https://doi.org/10.7939/R3057D77Q>

Related paper:

Zhang, L., & Mou, W. (2018). Selective resetting position and heading estimations while driving in a large-scale immersive virtual environment. *Experimental Brain Research*, accepted.