

The gain formula used in Indirect *Grab* technique for the study. For *Joystick*, S_{max} is replaced with D_{max} , and S_{min} is replaced with D_{min} . The S and D are speed and distance respectively. Please refer to the paper (below) for more details.

$$y = \left(\frac{(C_{max} - C_{min})}{1 + e^{-A(x - (h(S_{max} - S_{min}) + S_{min}))}} \right) + C_{min}$$

	Mode	S_{max} / D_{max}	S_{min} / D_{min}	h	A	C_{max}^*	C_{min}^*
Indirect grab	Pan	0.25	0	0.4	42	4	0.45
Indirect	Zoom	0.25	0	0.4	40	0.5	0.042
Joystick	Pan	0.1	0	0.3	113	10	0.7
Joystick	Zoom	0.1	0	0.3	90	1.25	0.03

*m/s for Indirect Grab and m for Joystick

Reference

Nancel, M., Pietriga, E., Chapuis, O., & Beaudouin-Lafon, M. (2015). Mid-Air Pointing on Ultra-Walls. *ACM Transactions on Computer-Human Interaction*, 22(5), 1–62.
<https://doi.org/10.1145/2766448>