Comparison of vestibular input statistics during natural activities and while piloting an aircraft

Running title: Vestibular inputs in natural activities and while piloting

Authors: Roques, A.^{1,2,3}, James, Y³, Bargiotas, I.¹, Keriven Serpollet D.¹, Vayatis, N.¹, Vidal, P.-P.^{4,1*}.

¹Centre Borelli, CNRS, SSA, INSERM, Université Paris Saclay, ENS Paris Saclay, Université Paris Cité, 75006 Paris, France

²Laboratoire GBCM, EA7528, CNAM, Hesam Université, 75003 Paris, France

³Thales AVS, 95520 Osny, France

⁴Institute of Information and Control, Hangzhou Dianzi University, Hangzhou, China

Figure 3: Power spectra

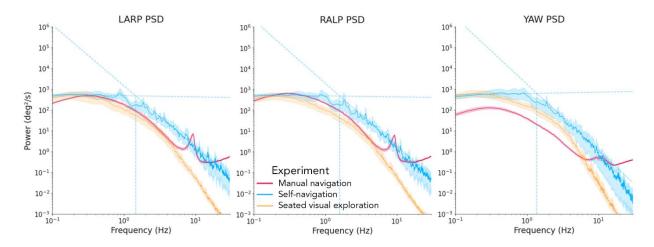


Figure 3: Population-averaged power spectra of the head-velocity in the LARP, RALP and YAW planes with corresponding 95% confidence interval (shaded areas). Red: manual navigation task, blue: self-navigation task, orange: seated visual exploration. The blue dotted lines correspond to the power law fits of the self-navigation task. The characteristics of the fits are as follows: slope of the LARP low frequency fit = -0.06 ± 0.12 deg², slope of the LARP high frequency fit = -2.92 ± 0.08 deg², transition frequency = 1.46 ± 0.29 Hz; slope of the RALP low frequency fit = -0.05 ± 0.08 deg², slope of the RALP high frequency fit = -3.03 ± 0.11 deg², transition frequency = 1.59 ± 0.33 Hz; slope of the YAW low frequency fit = -3.03 ± 0.11 deg², transition frequency = 1.37 ± 0.22 Hz.