



Supplemental Figure 3. Distance correlation between running and population activity confirms that running strongly modulates firing in auditory cortex. We measured the relationship between running speed and spontaneous activity during prolonged periods of silence, by computing the distance correlation jointly between running speed and the firing rates of all simultaneously recorded neurons. To test the timescale of this relationship, we binned firing rates into bins ranging from 50 ms to 12.8 s. Running speed was significantly correlated with population activity across all time bins, with a broad peak at 0.4 s. Thus running is correlated with auditory cortical activity at a time scale of a few hundred milliseconds. N = 67 simultaneously recorded populations in 12 mice.