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Neural Dynamics, Exercise 5, Nov 20, 2014

Read the short paper: Bastian, Riehle, Erlhagen, Schöner: Prior information preshapes the population representation of movement direction in motor cortex *Neuroreports* 9:315-319 (1998) provided on the webpage. This provides background information to the lecture slides.

1. Describe the task of the monkey in words. What is the time structure of that task? Illustrate that perhaps by drawing a time axis. What is the parameter whose encoding is being studied: Describe it in words and make a drawing that illustrates that parameter.

2. Graphically illustrate the method of construction of the population representation. Explain the method in words (distribution defined over which axis, what is the variable? write down and explain the formula).

3. Illustrate and describe in words the time course of the distribution of population activation observed in this task (Fig. 2 in the paper).

4. What does the "concentration" measure assess? What does the dependence of concentration on the number of pre-cued targets shown Figure 3 imply?