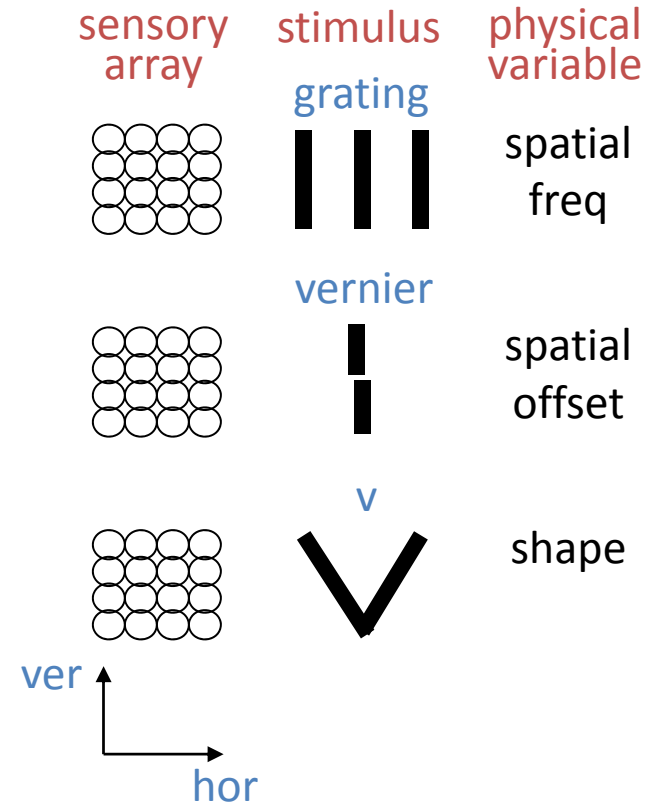


Active Sensing: Exercise #1

- consider a matrix of 4x4 receptors (R)
- consider 3 stimuli: grating, vernier, V, and their associated physical variables
- describe the neuronal variables that encode the physical variables, and analyze their behavior, for each stimulus in 3 cases:
 - passive: stimuli flash on the array for 100 ms
 - active 1: the array moves in one direction; stimuli are stationary
 - active 2: the array oscillates (back and forth) at 10 Hz; stimuli are stationary



- assume the spatial relationships depicted in the figure
- assume a constant array velocity = 100 R/s
- analyze active 1 & 2 for both horizontal and vertical motion
- analyze the effect of stimulus size in relation to receptor size
- for each case, mark the coding regime in a spatio-temporal coding space