Simulation of olfactory bulb behavior based on oscillation model of mitral/granule cell connectivity

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The model presented here involves the two main types of cells in the olfactory bulb, i.e. mitral and granule. These are arranged in an array of coupled non-linear oscillators. The behavior of the bulb in response to different odors as well as to an artificial impulse was simulated. The model exhibits distinct patterns of oscillation, which are unique for each odor. The observed results resemble experimental observations of the real bulb. In addition we provide reasons why an oscillatory modeling of the olfactory bulb is appropriate.