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Cover legend: A Voronoi decomposition of sleep state-space derived from an electroencephalographic (EEG) recording made in a naturally sleeping rat. A sleep state-space is a two-dimensional scatter plot bounded by EEG variables that correlate with sleep–wake state, in which the position of a single point represents the EEG state of the forebrain during a single recording epoch. A Voronoi decomposition partitions the state space into individual cells, each enclosing a single point; cell area is inversely proportional to local point density (coded by color). Two clusters are visible. The top left cluster represents rapid eye movement (REM) sleep while the bottom right cluster consists of non-REM sleep data points. This technique is used in the analysis of non-REM-to-REM sleep transition dynamics, which revealed that cholinergic inputs to the pontine REM sleep generator reinforce, but do not initiate, the generation of REM sleep (contrary to a long standing hypothesis in sleep neurobiology). For more details, see the article by Grace et al. (14198–14209).

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