

## Condensed Matter &gt; Statistical Mechanics

# Control spiral wave dynamics using feedback signals from line detectors

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We numerically study trajectories of spiral-wave-cores in excitable systems modulated proportionally to the integral of the activity on the straight line, several or dozens of equi-spaced measuring points on the straight line, the double-line and the contour-line. We show the single-line feedback results in the drift of core center along a straight line being parallel to the detector. An interesting finding is that the drift location in  $\$y\$$  is a piecewise linear-increasing function of both the feedback line location and time delay. Similar trajectory occurs when replacing the feedback line with several or dozens of equi-spaced measuring points on the straight line. This allows to move the spiral core to the desired location along a chosen direction by measuring several or dozens of points. Under the double-line feedback, the shape of the tip trajectory representing the competition between the first and second feedback lines is determined by the distance of two lines. Various drift attractors in spiral wave controlled by square-shaped contour-line feedback are also investigated. A brief explanation is presented.

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