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Pattern recognition with vector-type detector hits

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Novel types of “intelligent” trackers provide hits consisting of position-cum-direction rather than position alone.
We study several types of track finding algorithms in this context, for example the Hough transform, neural networks, a cellular automaton, track following, and the combinatorial Kalman filter. The performance of the algorithms is compared on simulated data in a simplified detector model, for various assumptions about the occupancy. We also voice some conjectures on which algorithms might be promising candidates for online deployment.

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