

This paper presents a compressive tracking framework using distributed binary sensors. The goal of this research is to achieve the minimum data throughput for an accurate multitarget tracking system through novel spatial sampling schemes. The framework consists of two main components: space encoding and measurement decoding. The space encoding scheme is based on the low-density parity-check matrix, which converts k -sparse target position vectors into different codewords. The measurement decoding scheme contains linear-programming-based localization and graphical-model-based tracking algorithms, which converts codewords into the states of multiple targets. A posterior Cramer-Rao bound analysis is utilized to achieve the tradeoff between the compression ratio of measurements and the accuracy of the tracking system. Simulation and experimental results are provided to validate the proposed framework