High-dimensional change-point detection with sparse alternatives

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We consider the problem of detecting a change in mean in a sequence of Gaussian vectors. We assume that the change occurs only in some subset of the vector components of unknown size. We construct a procedure of testing the change in mean adaptively to the number of changing components.
Under high-dimensional assumptions on the vector dimension and on the sequence length we obtain the detection boundary for this problem and show the minimax rate-optimality of the proposed test.
(Joint work with Zaid Harchaoui)