

## **Bi-modal tensor-valued distributions**

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Over the years, several powerful models have been developed to represent specific signal patterns. However, in real world problems there is often a need for handling more than one pattern simultaneously. The straightforward approach of adaptive model selection has proven to be difficult and fragile. At the core of this problem is the vicious intractable search space created by having to simultaneously select models and corresponding samples. This calls for higher order models where multiple patterns are represented as one more complex pattern. In this work, we illustrate the advantages of this approach using bi-modal tensor-valued distributions. The method uses a symmetrized tensor outer product as a representation, and an eigenvector based solution for recovering the events.

*Joint work with Hans Knutsson*