Inference in non parametric Hidden Markov Models

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In this talk I will review recent progress in the understanding of non parametric finite state space hidden Markov models. Identifiability is the basic stone to statistical inference. I will present situations where identifiability holds, and a connection with multidimensional mixture models. Several inference methods may be used such as spectral methods and model selection methods. I will explain how adaptive estimation is possible, and discuss applications and limitations of the algorithms.