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Sommario	<p>The thesis focuses on Hidden Markov Models (HMMs). They are very popular models, because they have a more versatile structure than independent identically distributed sequences or Markov chains, but they are still tractable. It is thus of interest to look for properties of i. i.d. sequences that hold true also for HHMs, and this is the object of the thesis. In the first part we concentrate on a probabilistic problem. In particular we focus on exchangeable and partially exchangeable sequences, and we find conditions to realize them as HHMs. For a special class of binary exchangeable sequences we also give a realization algorithm. In the second part we consider the problem of detecting changes in the statistical pattern of a hidden Markov process. Adapting to HHMs the so-called cumulative sum (CUSUM) algorithm, first introduced for independent observations, we are led to the study of the CUSUM statistics with L-mixing input sequence. We establish a loss of memory property of the CUSUM statistics when there is no change, first in the easier case of a i.i.d. input sequence, (with negative expectation, and finite exponential moments of some positive order), and then, under some technical conditions, for bounded and L-mixing input sequence.</p>
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