Reinforcement Learning based Radio Resource Scheduling in LTE-Advanced

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Abstract:
This contribution proposes an update on our current work on radio resource scheduling policy for Long Term Evolution Advanced (LTE-A) radio access technology in downlink. The scheduling process works with dispatching rules with different behaviors. We propose to mix rules over several TTIs instead using only a single one adopted across the whole transmission. The objective is to bring some improvements in terms of system throughput, system capacity, spectral efficiency and "operator benefit" while assuring the best user fairness and Quality of Services (QoS) capabilities (user benefit). We believe that the policy adoption and refinement are good ways to optimize the mixture of rules. A reinforcement learning algorithm is proposed for the policy adoption in order to transform the scheduling experiences into a decision-making process to decide on which rules will be used for each TTI.