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**Towards optimal green times at signalized intersections**

Setting traffic light signals is a classical topic in traffic engineering and especially important in heavy traffic conditions when green times become scarce and longer queues are inevitably formed. For the fixed-cycle traffic-light queue, an elementary queueing model for one traffic light with cyclic signaling, we obtain heavy-traffic limits that capture the long-term queue behavior. We leverage these limit theorems to obtain sharp performance approximations for one queue in heavy traffic. We show that inserting those heavy-traffic approximations leads to tractable optimization problems and close-to-optimal signal prescriptions. Moreover, we show that the same heavy-traffic type of results obtained for the FCTL queue can be obtained more generally, e.g. for vehicle-actuated traffic lights.