Optimal Online Ring Routing

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Abstract

In this talk we study how to route online splittable flows in bidirectional ring networks to minimize maximum load. We show that the competitive ratio of any deterministic online algorithm for this problem is at least 2-2/n, where n is the size of the ring, and that the online algorithm that splits each flow inversely proportionally to the length of the flow's shortest path achieves this competitive ratio for all integers $n \ge 2$.