Greedy algorithms for scheduling periodic message on a single link

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***Abstract*—A recent trend in mobile networks is to centralize in distant data-centers processing units which were attached to antennas until now. The main challenge is to guarantee that the latency of the periodic messages sent from the antennas to their processing units and back, fulfills protocol time constraints. The problem is then to propose a sending scheme from the antennas to their processing units and back without contention and buffer.**

We study a star shaped topology, where all contentions are on a single arc shared by all antennas. We present several greedy heuristic to solve PAZL. We study their experimental efficiency and we use them to prove that when the load of the network is less than 44%, there is always a solution to PAZL. We also prove that for random lengths of the arcs, most of the instances have a solution when the load is less than 45%.

I. Introduction

II. Model

Describe the model with a picture + a set of number $d_1, \ldots, d_n$ and two values P, τ. [**?**]

III. Algorithms

A. First position

Describes how it builds compact assignments

B. Meta intervals

Copy the results of the previous article and add the results with the compacity heuristic.

Question, when $\tau = 1$ the two previous algorithms work for a load of $1/2$. Can we attain this bound for any τ?

C. Pairs of elements in order of shifts

D. Tuples of elements in order of shifts

IV. Algorithms for random instances

V. Results for $\tau = 1$

VI. Lower bounds

VII. NP-hardness