

1 We thank the reviewers for their valuable feedback. In two of the reviews the paper’s topic and its connection to NeurIPS
2 was discussed. While the paper is clearly algorithmic, we believe that it is a good fit for NeurIPS. It is in the new
3 and rapidly growing field of learning-augmented online algorithms that use predictions about the future, an important
4 application of machine learning. We see it as interdisciplinary research with great potential, in particular, because some
5 of the techniques might not be typical in this area. Numerous papers of this field have been presented at NeurIPS and
6 other conferences of similar scope, see for example [6,7,12,13,14] in our literature review.

7 **Reviewer #1.** The baseline online algorithms do not use the predictions at all. Our algorithm is the first to consider
8 this prediction setting. Hence, it is impossible to say that our algorithm is better or worse than those algorithms. The
9 purpose of the experiment is not to make such a comparison, but to empirically verify the message of the theoretical
10 analysis. Namely, we understand that indeed with a good prediction the algorithm is superior to online algorithms
11 that do not use the prediction. Another crucial property of the algorithm is that it still performs reasonably well, if the
12 prediction is very bad. If the prediction is misleading, it should intuitively be damaging to the algorithm to make any
13 use of it. Since we consider both settings (good and bad predictions) we believe that our experimental setup is fair.

14 Regarding the measure of prediction error and that the reviewer knows no ML algorithm that gives such guarantees:
15 Indeed, one of the strengths of the considered model is that the algorithm makes no assumptions on the guarantees of
16 the prediction but is guaranteed to work well if predictions are good and be comparable to worst-case guarantees if
17 the predictions are bad. We think that the considered measures of error is the most natural one except possibly for the
18 power of α which we show is necessary.

19 **Reviewer #2.** No objections.

20 **Reviewer #3.** The parameter α is problem specific. If one is to consider energy consumption of processors in relation
21 to its speed, the function is cubic, that is, $\alpha = 3$. This is arguably the most important case, which is why we have
22 focused on it in the experiments. We refer to [Speed Scaling to Manage Energy and Temperature, Bansal, Kimbrel,
23 and Pruhs] for a thorough justification of the model. We have run similar tests with other choices of α and observed
24 the same behavior on the artificial data and a much better performance of LAS with respect to the classical online
25 algorithms in the real data setting for larger α . We will include those in the final version.

26 The ability to incorporate ‘downstream’ schedulers refers to our robustification methods (in section 3.2 and appendix
27 H for general deadlines). Our methods can be used to make any schedule robust in a black-box manner (i.e. without
28 making any assumption on the schedule) at a small multiplicative cost.

29 The data set we used was previously used in the evaluation of learning augmented algorithms (as we note in the
30 experimental section) and we think that access pattern to a website is a good test bed for server workload.

31 **Reviewer #4.** Section D in the appendix deals with precisely the prediction setting proposed. Namely, we consider
32 the predictions in the far future to be less reliable and as time advances the prediction is adjusted. The take-away of this
33 section is that it is sensible to chop the timeline into small segments and to schedule each segment independently, which
34 turns the problem into the one considered in the main body. We also show with strong lower bounds that one cannot
35 do much better than that. Hence, the interesting core of the problem lies in the case we consider in the main body.
36 Indeed, the setting in the main body is somewhat restrictive, but there is an argument to be made for having a clean and
37 self-contained study in the main body. We feel that the more general algorithms could not be discussed appropriately
38 under the given space constraints, hence we decided to move them to the appendix.

39 We thank the reviewer for providing additional related literature. We will include it in the final version of the paper.