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Non-Adaptive Matroid Prophet Inequalities For Minor-Closed Matroid Classes

We consider the problem of matroid prophet inequalities. Kleinberg and Weinberg have constructed a 2-competitive mechanism for all matroids. However, their mechanism recomputes thresholds during its course. In other words, their mechanism is adaptive.

The non-adaptive case is far from resolved. There are known constant-competitive nonadaptive mechanisms for uniform and graphical matroids, but some classes of gammoids do not admit constant-competitive nonadaptive mechanisms.

In this work, we present constant-competitive nonadaptive mechanism for all regular matroids and for further minor-closed families of matroids.

Joint work with Alice Sayutina.