OPTIMIZING AIRSPACE WITH RESPECT TO POLITICIAN'S EGGS

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OPTIMIZING AIRSPACE CLOSURE WITH RESPECT TO POLITICIAN'S EGOS

FUN WITH ALGORITHMS 2014, LIPARI, ITALY

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THE PROBLEM

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2

THE PROBLEM

"Aircraft arrivals get delayed by unscheduled airspace closure."

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3



3

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THE QUESTION

"How do we minimize the total delay caused by the closure?"

THE MASTERPLAN

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6

THE MASTERPLAN



6

THE COLOUR SCHEME

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THE COLOUR SCHEME



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8





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40

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8



























THE ALGORITHM





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THE ALGORITHM



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THE ALGORITHM




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9





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9



9



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THE THEOREM

10 OPTIMIZING AIRSPACE CLOSURE WITH RESPECT TO POLITICIAN'S EGOS

THE THEOREM

"We can compute an optimal interval of given length that minimizes the delay in $O(n \log n)$ time."

THE EXTENSION

11 OPTIMIZING AIRSPACE CLOSURE WITH RESPECT TO POLITICIAN'S EGOS

THE EXTENSION

"We can also build a data structure of size $O(n^2\alpha(n))$ in $O(n^2\log n)$ time to do that in only $O(\log n)$ time!"

12 OPTIMIZING AIRSPACE CLOSURE WITH RESPECT TO POLITICIAN'S EGOS







































12



12



12


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THE NEW THEOREM

14 OPTIMIZING AIRSPACE CLOSURE WITH RESPECT TO POLITICIAN'S EGOS

THE NEW THEOREM

"We can build a data structure that reports, given T, the largest Lfor which there is no delay in $O(\log n)$ time."

THE CONCLUSION

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THE CONCLUSION

"We can accomodate demanding VIPs with minimal impact to the general public in polynomial time."

THE END



16 OPTIMIZING AIRSPACE CLOSURE WITH RESPECT TO POLITICIAN'S EGOS