A TIME-DEPENDENT SWITCHING MEAN-FIELD GAME ON NETWORKS

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Motivated by an optimal visiting problem, we investigate a switching mean-field game model on a network, where both a decisional and a switching time-variable are controls at disposal of the agents for what concerns, respectively, the instant to decide and to perform the switch. Every switch between the nodes of the network corresponds to a flip from 0 to 1 of one component of the string $p = (p_1, \dots, p_n)$ which, in the optimal visiting view, possibly represents the visited targets, being labeled by $i = 1, \dots, n$. The goal is to reach the final string $(1, \dots, 1)$ (i.e., to visit all the targets) within a fixed final time T, minimizing a switching cost also depending on the congestion on the nodes. We show the existence of a suitable approximated ε-mean-field equilibrium and then address the limit when ε goes to 0.

This is a joint work with Fabio Bagagiolo. The main reference is preprint [1], submitted in December 2021. In the *References* section, you can find all the bibliography concerning the topic.

References

[1] F. Bagagiolo, L. Marzufero, *A time-dependent switching mean-field game on networks motivated by optimal visiting problems*, Preprint 2021, *arXiv:2201.00260*.

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