

# Stochastic Games and Banach-Mazur Games

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A Markovian Decision Process (MDP) models the situation where a controller wants to maximise the probability of an event. Sometimes, it is sufficient to compute a strategy that forces the event almost-surely (almost-sure strategies), for more details c.f. [2, 3]. When the events of interest form an omega-regular set, an almost-sure strategy exists if and only if a topological condition holds true [1, 4]. Indeed, a strategy is almost-sure if it induces a co-meagre set of runs. This result by construction of a Banach-Mazur game.

The purpose of this internship is to extend the above result to the case of stochastic games.

## References

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