# Strategic Complexity in Repeated Extensive Games[*]

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### Abstract

This paper studies a machine (finite automaton) game for a two-player extensive-form stage game. We introduce a new measure of strategic complexity called "multiple complexity", which considers information structure inside the stage games as well as the number of states of machines. In contrast to Piccione and Rubinstein (1993), we prove existence of non-static equilibria. In case of the sequencial-move prisoners' dilemma game, there exists an equilibrium in which cooperation is realized.

# References

[1] Abreu, D., and Rubinstein, A. (1988). The Structure of Nash Equilibrium in Repeated Games with Finite Automata, *Econometrica* 56, 1259-1282.

[2] Piccione, M., and Rubinstein, A. (1993). Finite Automata Play a Repeated Extensive Game, *Journal of Economic Theory* 61, 160-168.