Convexity and Repeated Games

by
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Abstract

The concepts of concavification and convexification of functions play an essential role in the analysis of a branch of game theory called ‘Repeated games with incomplete information’. The most important and interesting aspects of such games are the flow of information, rates of revealing and rates of collecting information. The mathematical expression of these aspects relies heavily on the concepts of concavification and convexification which seem to be very intimately related to the concept of information. In our talk we first formulate some problems and results, concerning convexification, taken out of context from the works on repeated games. Then starting with a few simple examples we introduce a basic result about repeated games with incomplete information involving concavification and convexification. By proving a simple theorem, we then try to see how convexity comes into the subject. Finally we generalize the first result referring back to the theorems stated at the beginning of our talk.