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The game of go as a complex network BERTRAND GEORGEOT, LPT IRSAMC CNRS/univ. Paul Sabatier Toulouse France, OLIVIER GIRAUD, LPTMS CNRS/univ. Paris-Sud, Orsay France, VIVEK KANDIAH, LPT IRSAMC CNRS/univ. Paul Sabatier Toulouse France — We have studied the game of go, one of the most ancient and complex board games, from a complex network perspective. We have defined a proper categorization of moves taking into account the local environment, and shown that in this case Zipf's law emerges from data taken from real games. The network shows differences between professional and amateur games, different level of amateurs, or different phases of the game. Certain eigenvectors are localized on specific groups of moves which correspond to different strategies (communities of moves). The point of view developed should allow to better modelize such games and could also help to design simulators which could in the future beat good human players. Our approach could be used for other types of games, and in parallel shed light on the human decision making process.

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