PRESIDENTIAL ELECTION WITH SPREADING POLITICAL OPINIONS BASED ON HUMAN MIGRATION

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The voter model has been studied in various systems to understand how opinions spread. Recently, several studies showed that election results can be addressed by applying the voter model with commuter flow. However, political opinions of individuals can be strongly affected by their birthplaces as well as where they are. We apply the voter model to presidential election in South Korea from 1971 to 2012, considering the annual inter-province flow of migration. Keeping information of birthplace, agents change their political opinions with given probability which is assigned by birthplace. We optimize the probability of changing opinions, comparing the outcome from real elections with simulation results. From several presidential elections, trace of the probability show the evolution of political bias based on a province. We expect that the long-term evolution of the probability may show the changes in province-wise political opinions.