Abstract

It is observed that in a pedestrian flow, pedestrians tend to move in groups and this grouping phenomenon has a vital influence on the flow. When pedestrians move considering no group interaction, primarily goal's attraction derives the flow. But when pedestrians move in a group apart from goal's attraction, there are some additional attractions they feel from other members of same group influencing its flow. Thus introducing group phenomenon becomes significant. Using cellular automata, a simulation model is developed on microscopic pedestrian flow. Network theory (Dijkstra's Algorithm) is used to find the shortest path to all anticipated available cells in the accessible range of pedestrian occupying the source cell. Pedestrians follow the shortest path, to reach available cell having highest attractive value. The attractive value of cell for a pedestrian is calculated considering goal's attraction as well as attraction from other members of the same group.