

# **Developing the simulation model for infectious disease spreading in Korea based on transportation and mobile phone data**

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## **Abstract**

We have developed simulation model to predict diffusion pattern of infectious disease in following two ways.

1) We constructed a pattern that can measure local human movement based on the number of urban bus routes and the number of operations. Also we constructed a pattern that can measure the movement of people across the country by the number of cars passing between highway tollgates, the number of passengers between express bus terminals, and the number of passengers between railway stations. We have developed an infectious disease spread model based on deterministic ordinary differential equations that considers the characteristics of regional and national human movement simultaneously.

2) Based on the mobile phone location data, the movement patterns between night residence area and day residence area were constructed. Based on these characteristics of human movement, we developed an individual based stochastic infectious disease diffusion simulation model.

**Keywords:** *infectious disease; human mobility; simulation*

## **Biography**

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