Data description

We collected geodetic position information of all users from one mobile carrier in Shanghai for a continuous 24 hour period. The dataset includes coded mobile phone ID, date, time, latitude and longitude.

Data generation:

When a mobile phone is in service, it connects with the nearest cell tower every one second for regular tracking. The Mobile Carrier system communicate with the mobile device through cell tower and record the latitude and longitude of cell tower. In addition to regular tracking, the system also keep the record of mobile device when one of the following events happen:

(a). mobile phone users send or receive massages;

(b). mobile phone users make a phone call or receive a phone call;

(c). mobile phone users travel from area related to one cell tower to area related to another cell tower.

The data we collected are records that filtered out regular tracking, without the loss of the information related to user travel from one place to another.

In total, we collected data of more than 1.1 billion records. These records are from 37450 different cell tower all over Shanghai with average density 5.91 cell tower per kilometer square.