It does not Fitts my data!
Analysing large amounts of mobile touch data

Bubble touching tasks
We developed a game for Android to collect large amount of touch data. A part of the game is designed as what we expected to be a Fitts Law task. Players have to tap on circles as fast as possible. We randomize the targets position and size. Publishing the game in the Android Market we collected 5,359,650 tasks from 63,154 users.

Applying Fitts' law
Determining a (intercept) and b (slope) we found that a=.20 and b=.04. Correlation is r=.14 and index of performance is IP=25.01. Regardless how we constrain the dataset, IP is unlikely high and the correlation is weak.

Not a Fitts' Law task?!
To investigate why Fitts' law isn't a model for our data we tested the correlation with the targets' width and the distance to the target independently. Using data from one type of device the correlation between time and distance is r=.33. Correlation is the same as with Fitts' law. The same amount of variance can be explained by the correlation with ID and the correlation with the distance to the target. Testing different functions (e.g. log₂(W), 1/W, log₂(1/W)) does not reveal a higher correlation.

There is more in the data...
More aspects can be investigated using the data. We found devices with probably faulty touchscreens [1], determined a skew in the touch distribution that can be compensated [2], and analyzed when people install games to find the best time to submit apps to the Android Market [3].