

Measuring Mobile Sessions

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Measuring Mobile Sessions

I got asked a question...

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How long are mobile readers' sessions?

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- Interesting. Enables:

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- Read time analysis

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- View clustering

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- Interesting. Enables:
- Read time analysis
- View clustering
- Defining new terms

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How long does a Unique Client spend browsing Wikipedia in a single Session?

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- Identifying “unique clients” (UCs)

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- Identifying “unique clients” (UCs)
- Identifying “sessions”

Measuring Mobile Sessions

- Mobile is a particular challenge

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- Mobile architecture: AOL from the early 2000s

Measuring Mobile Sessions

- Mobile is a particular challenge
- *Readers* are a particular challenge
- Mobile architecture: AOL from the early 2000s
- Reader PII: highly limited

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- Mobile architecture:
- On a wireless network? No problem!
- Using a data plan? Problem.

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- Mobile architecture:
- On a wireless network? No problem!
- Using a data plan? Problem.
- Very few externally facing IP addresses

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- Reader PII:
- (deliberately) limited in our request logs

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- IP address, User Agent and language variant

Measuring Mobile Sessions

- Reader PII:
- (deliberately) limited in our request logs
- IP address, User Agent and language variant
- No cookies, no links to cookies

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- Algorithm with the most entropy:
- IP + UA + language variant

Measuring Mobile Sessions

- Identifying sessions:
- How do we define a session?

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- Doug Lea: (B M* E)

Measuring Mobile Sessions

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- How do we define a session?
- Doug Lea: (B M* E)
- look at when UCs stop making actions

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- Implementation, the first: Referrer tracking

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- Implementation, the first: Referrer tracking
- Some UCs don't have referrers
- Some UCs are mad. Well, all users are mad.
- Compensating for this requires heavy tech input.

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- Implementation, the second: inter-time analysis

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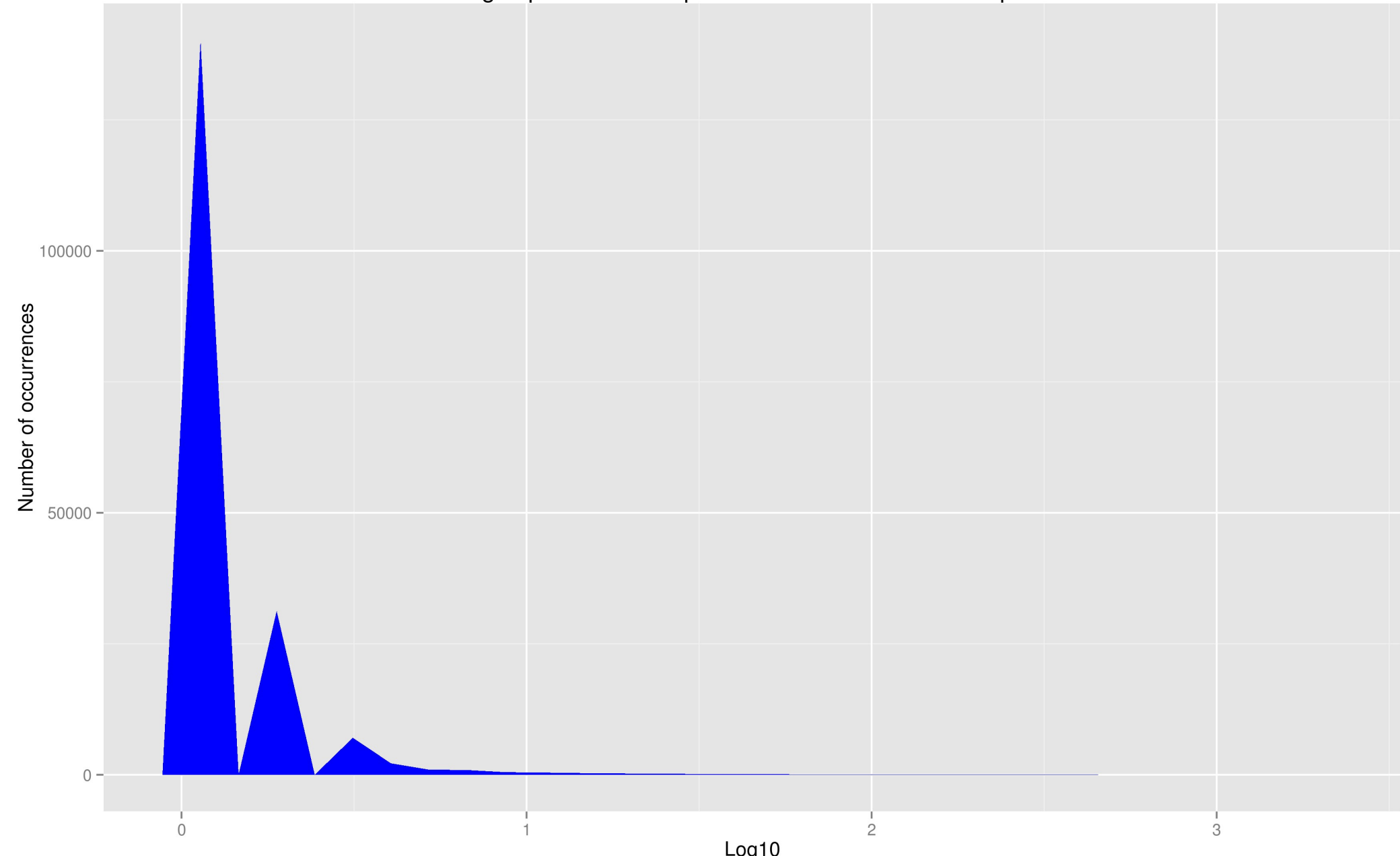
- Implementation, the second: inter-time analysis
- Look at the time between requests, for sampled UCs

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- Implementation, the second: inter-time analysis
- Look at the time between requests, for sampled UCs
- When people stop making actions, that's the end of the session.

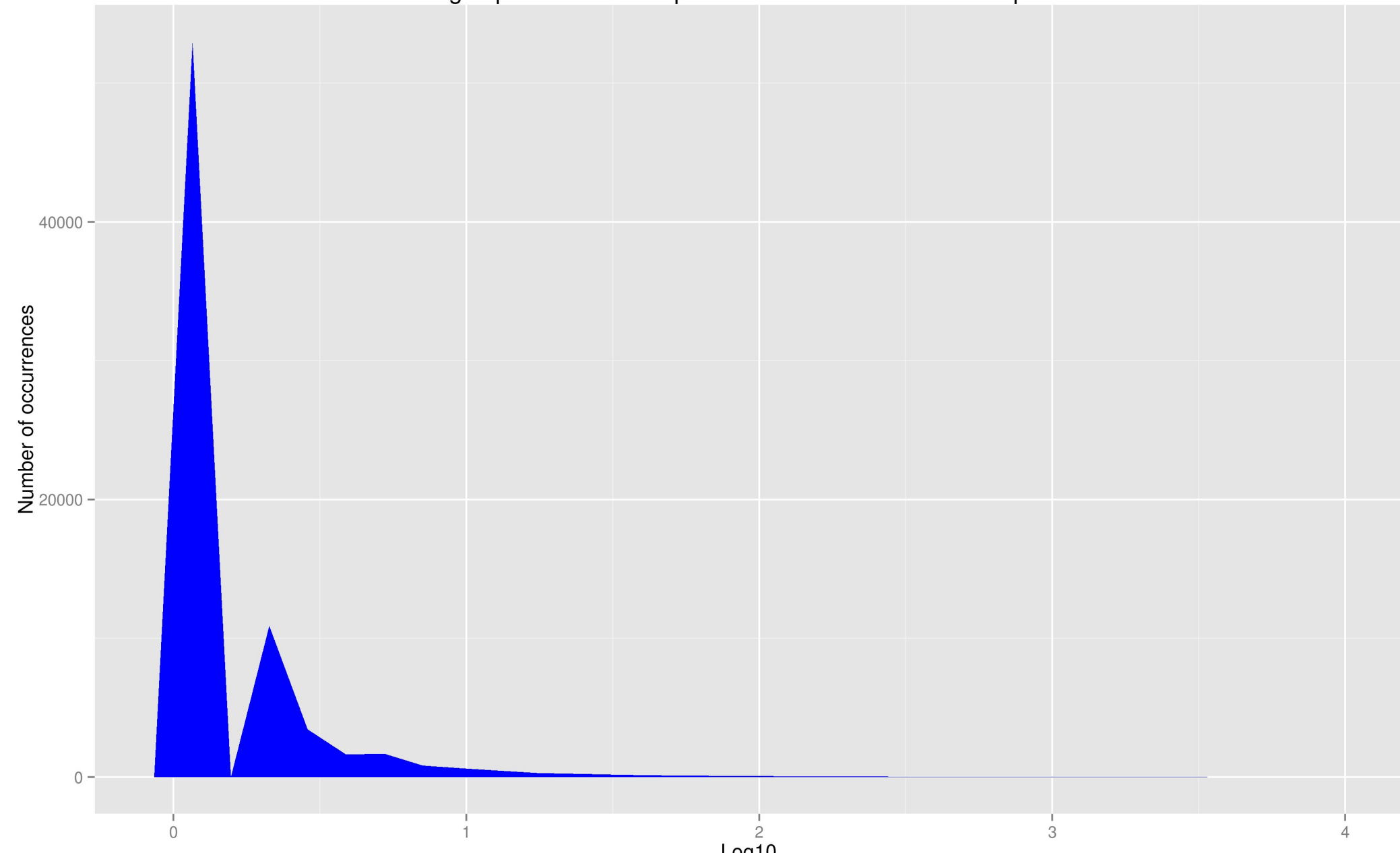
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Log10 plot of time elapsed from first mobile web request



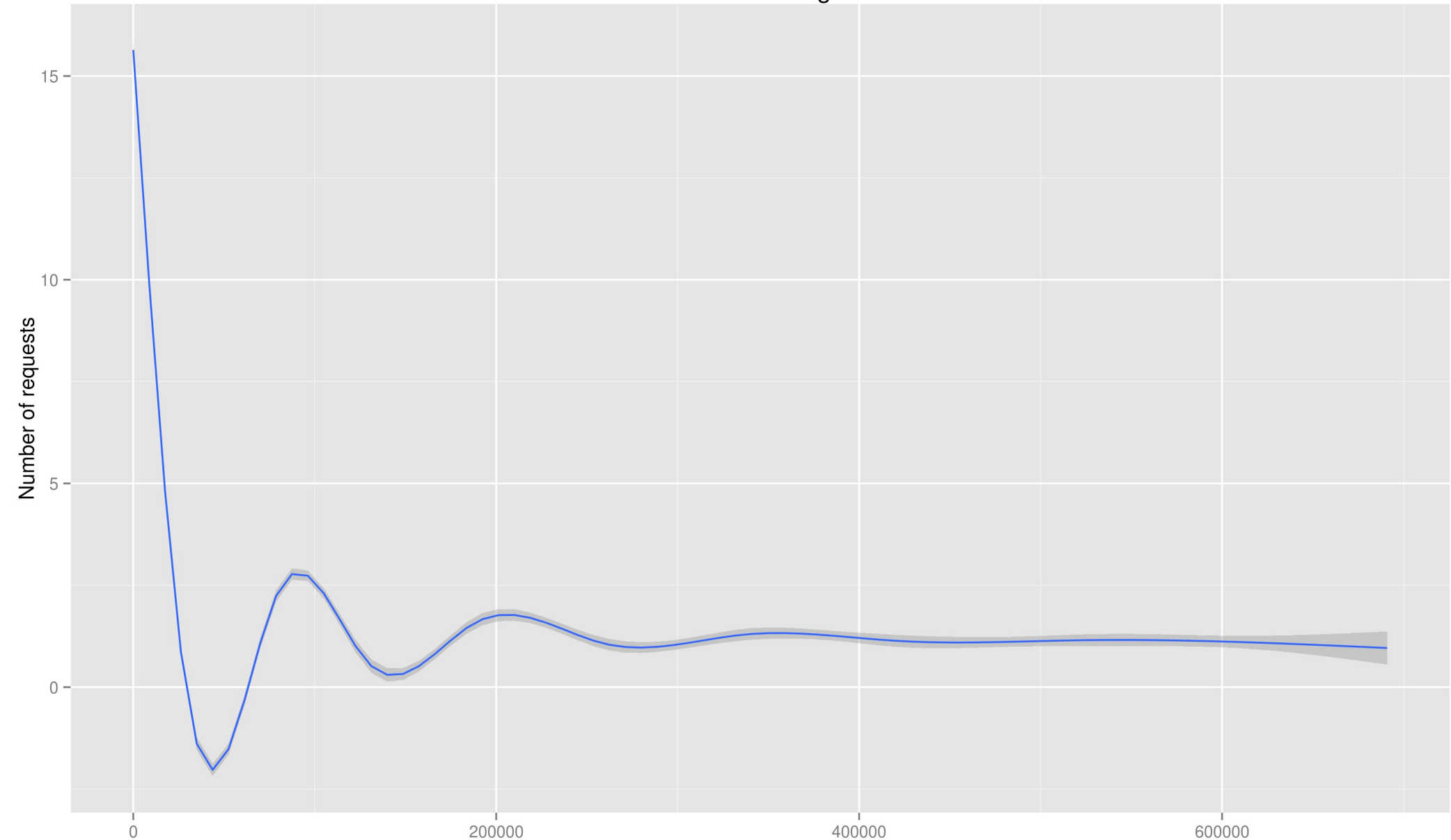
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Log10 plot of inter-time periods between mobile web requests



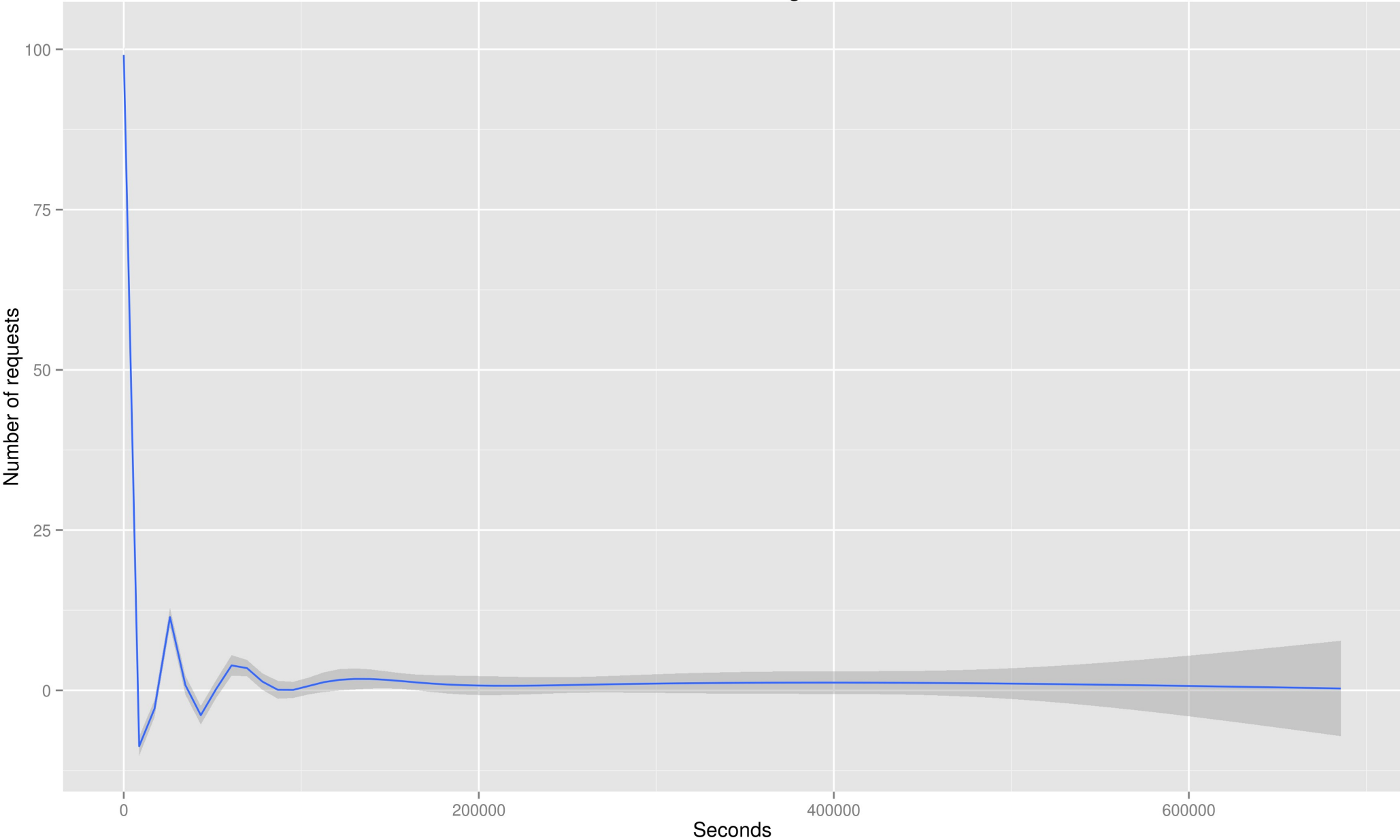
Measuring Mobile Sessions

Time elapsed from first mobile web request
unlimited range



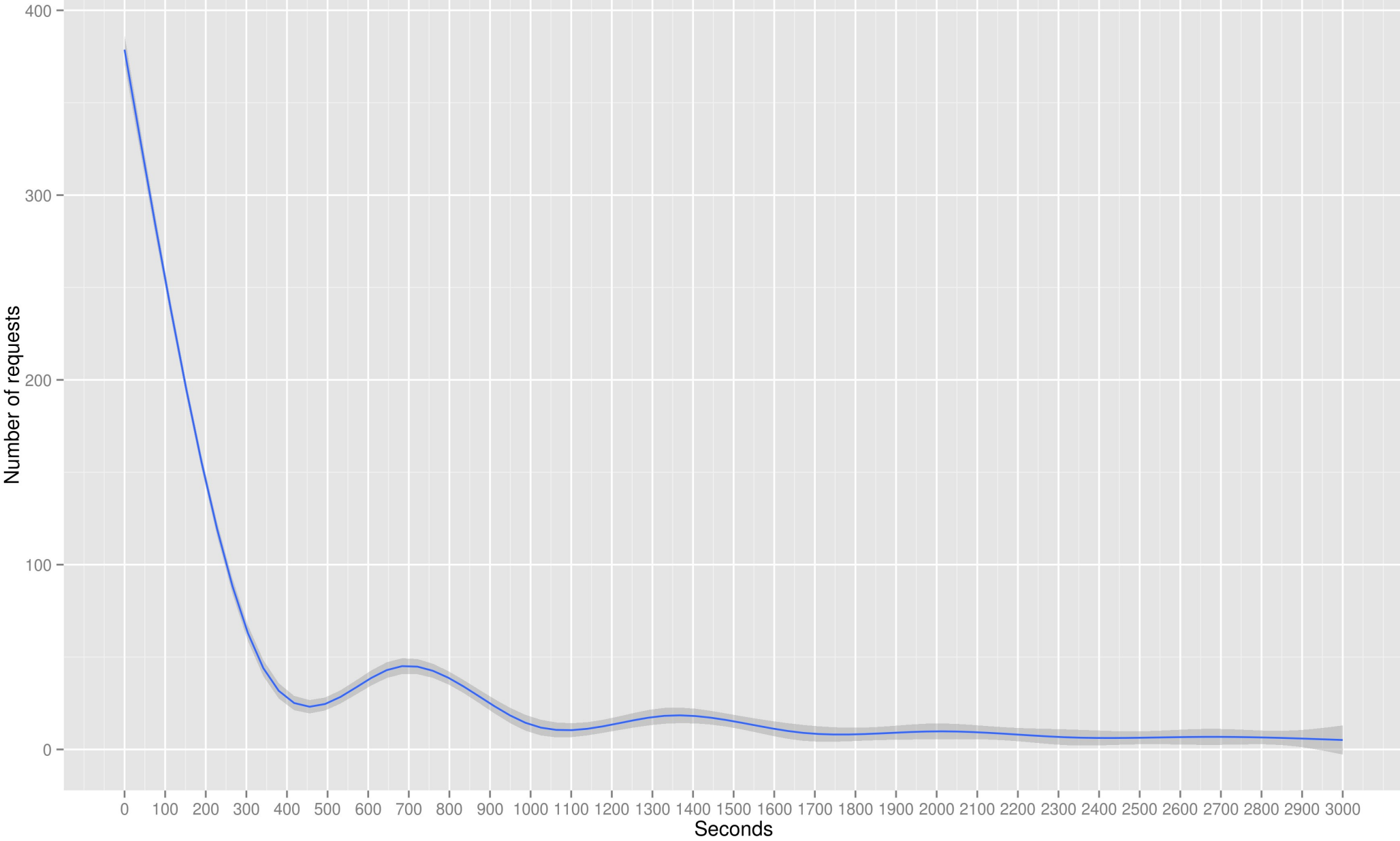
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Inter-time period between mobile web requests
unlimited range



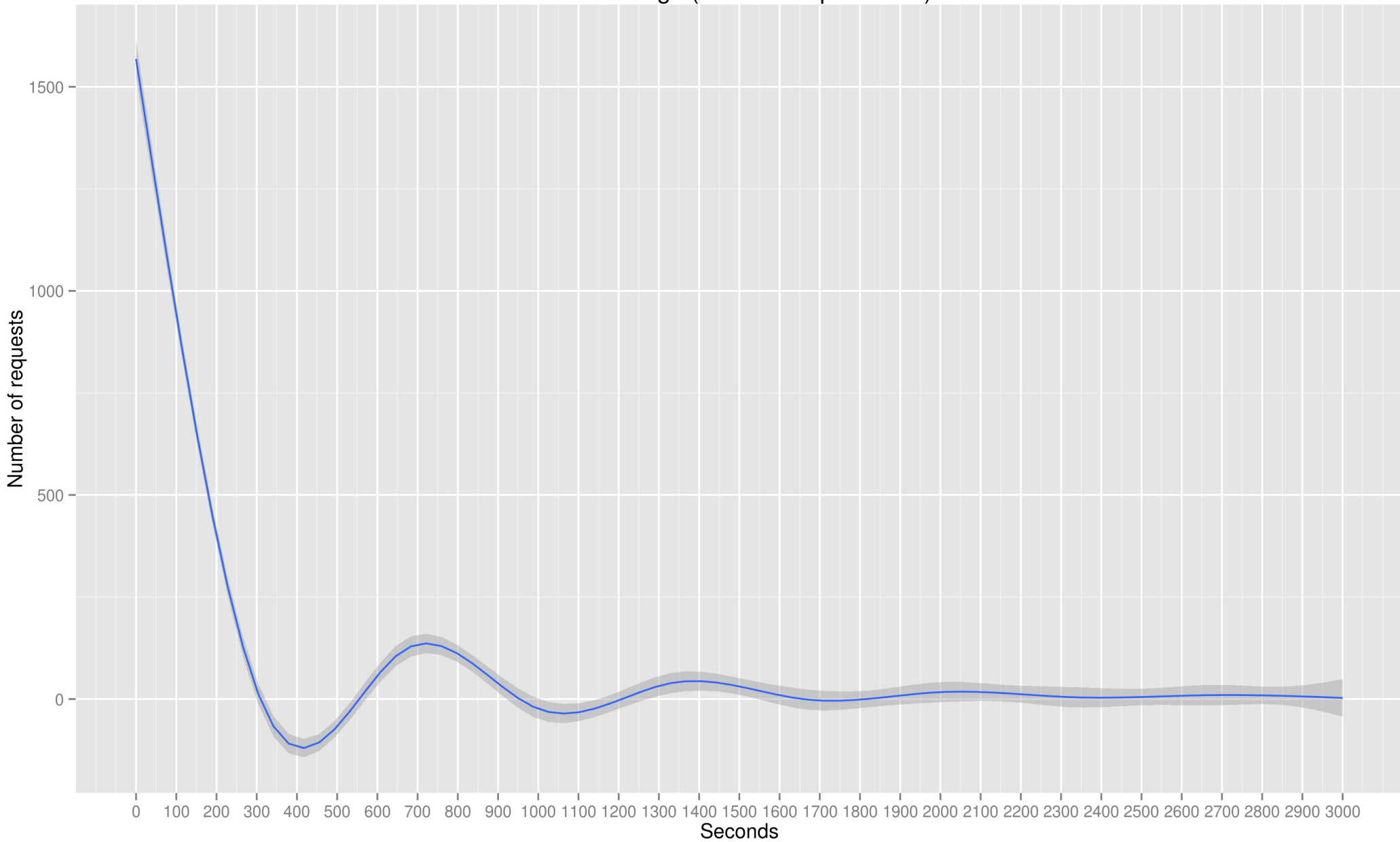
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Time elapsed from first mobile web request
limited range (0th to 10th percentile)



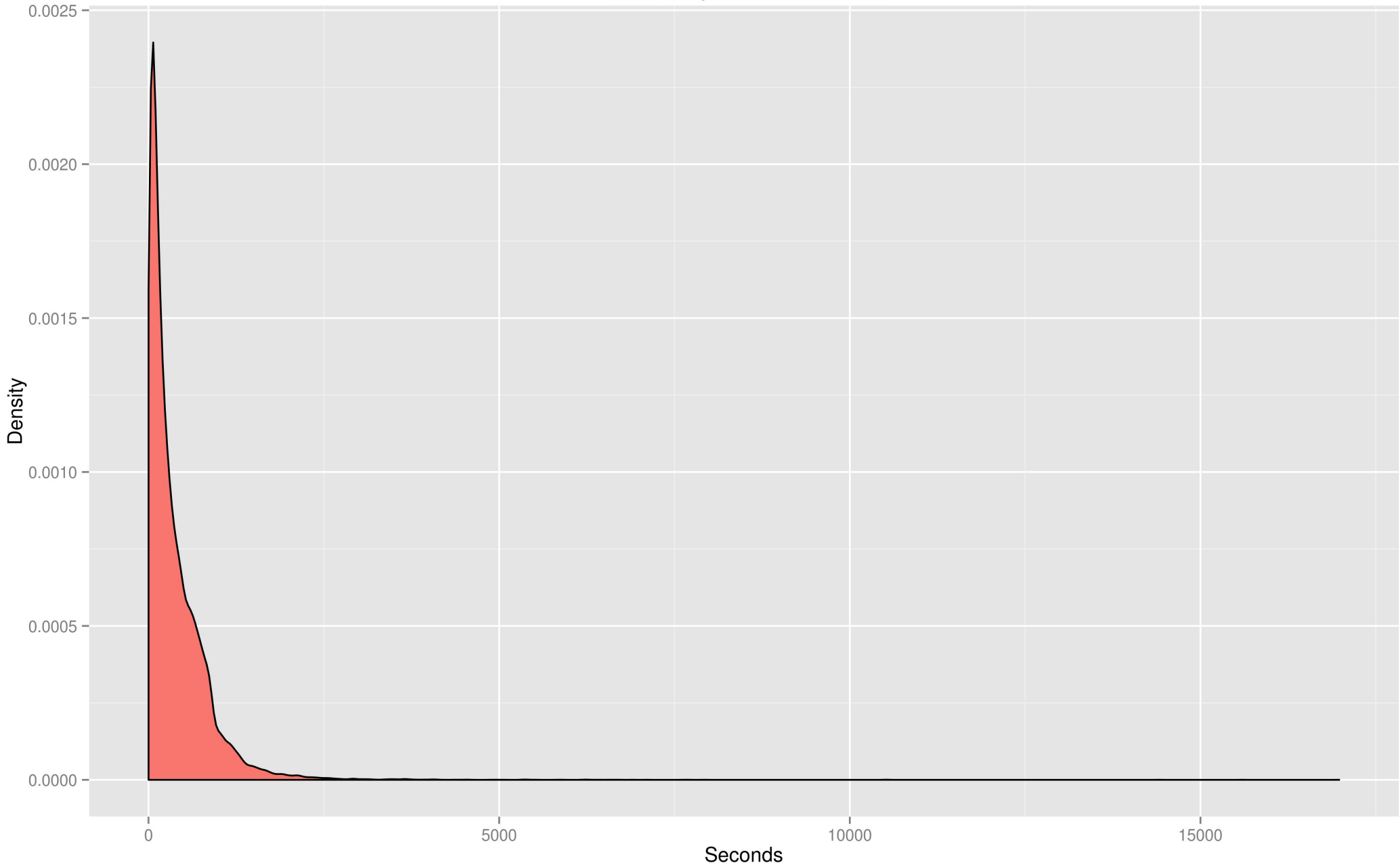
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Inter-time period between mobile web requests
limited range (0th to 10th percentile)



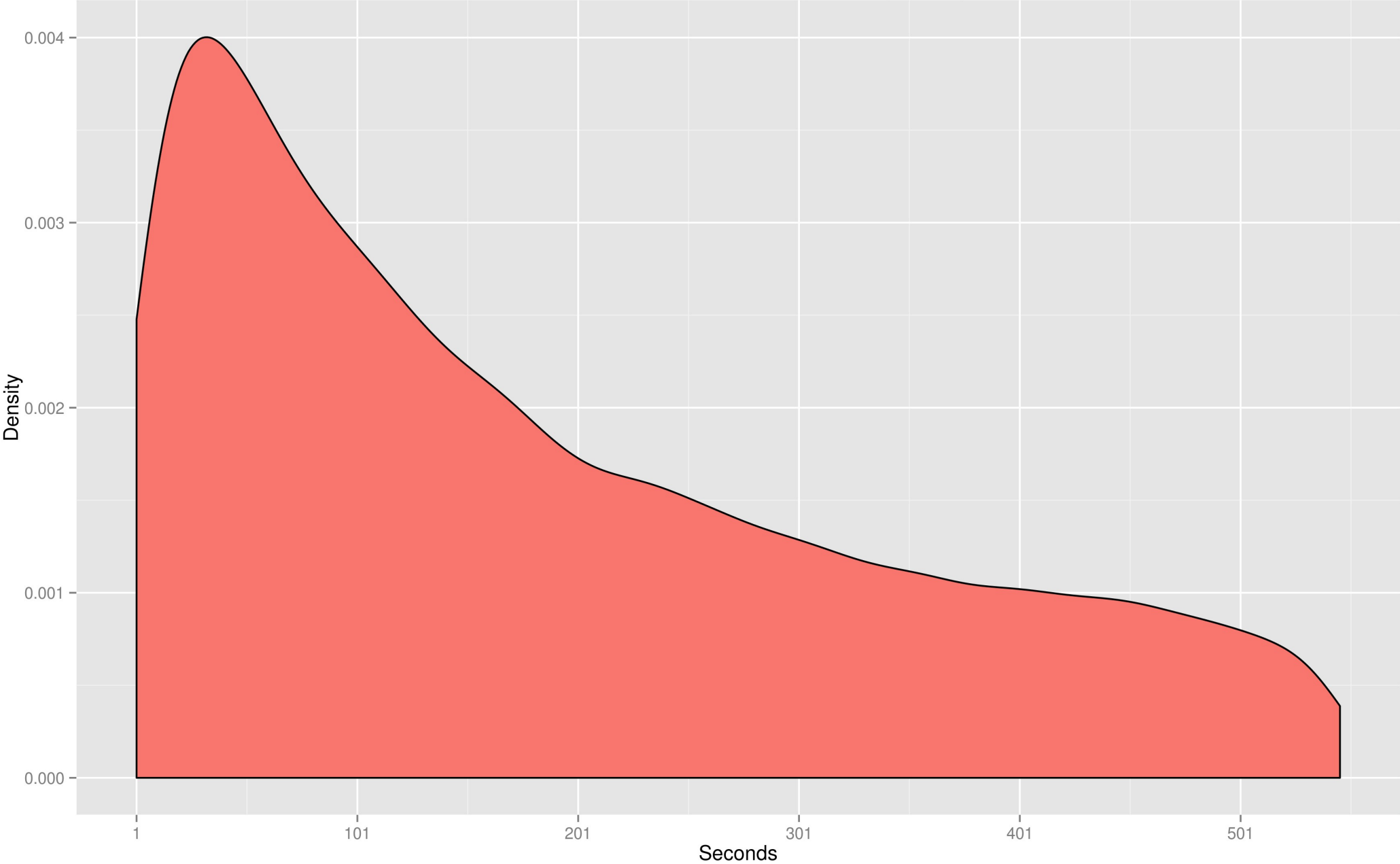
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Total mobile session times



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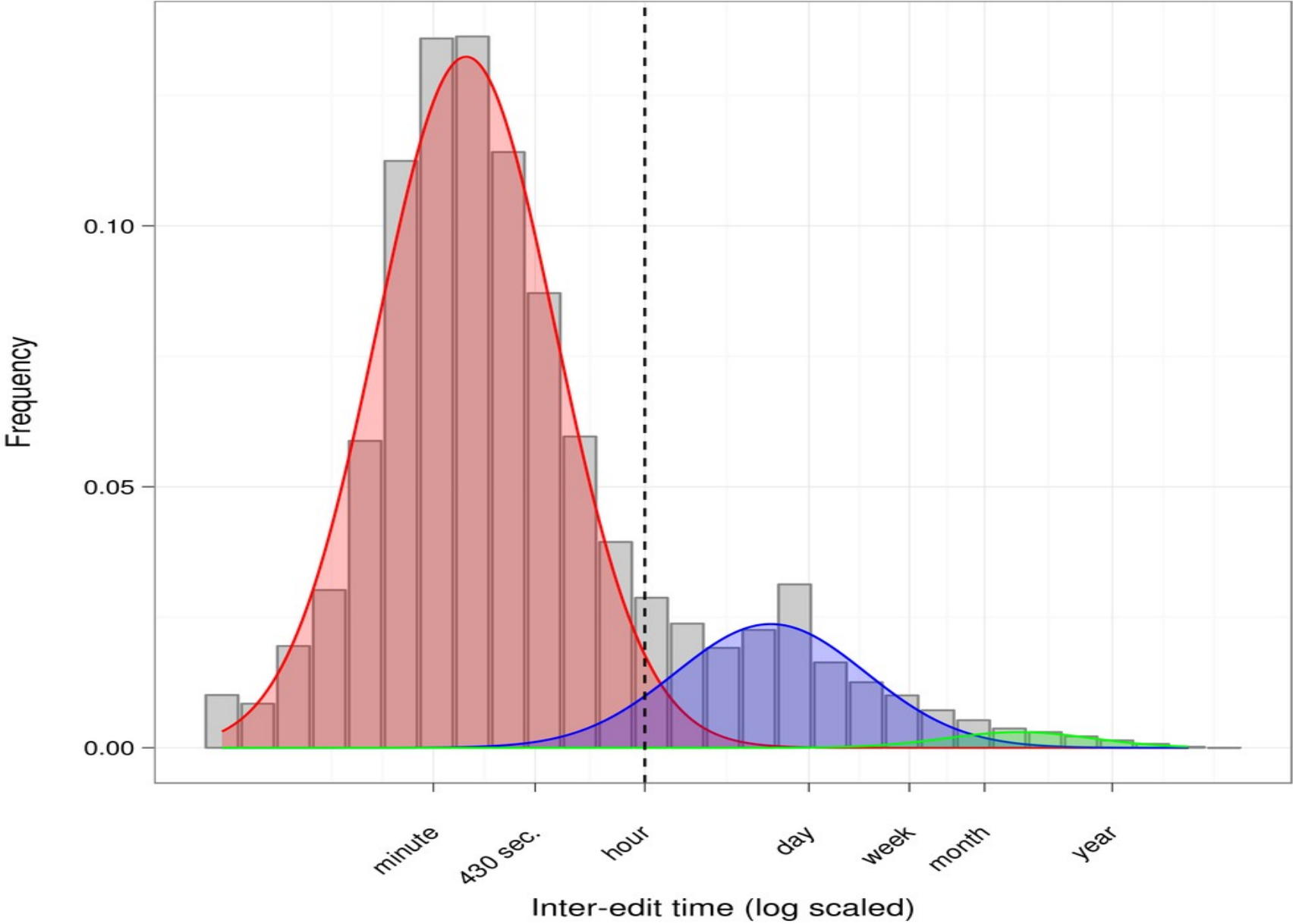
Total mobile session times (>75th quantile)



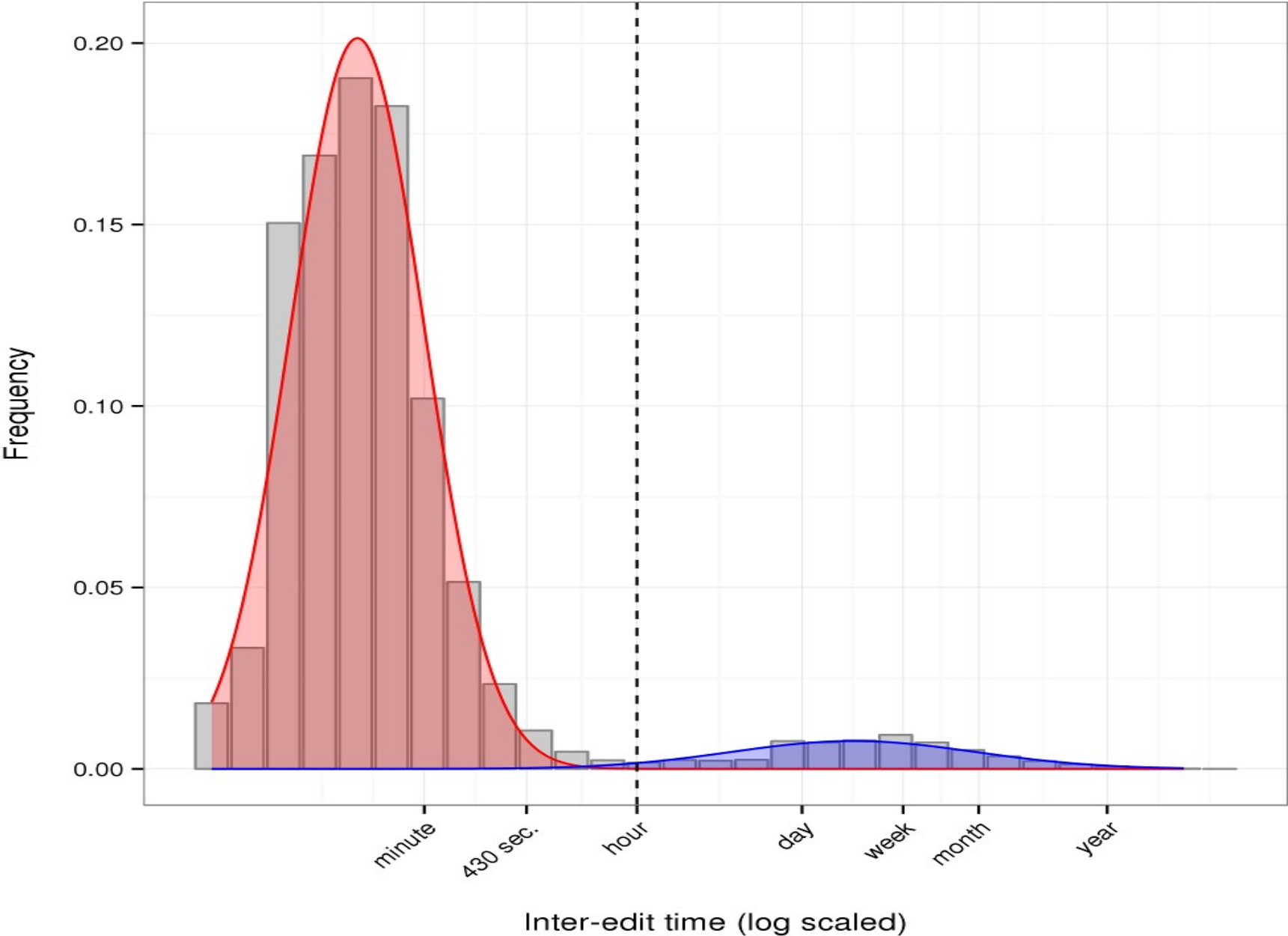
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- Still preliminary. But: my gut says that this is accurate. Why?

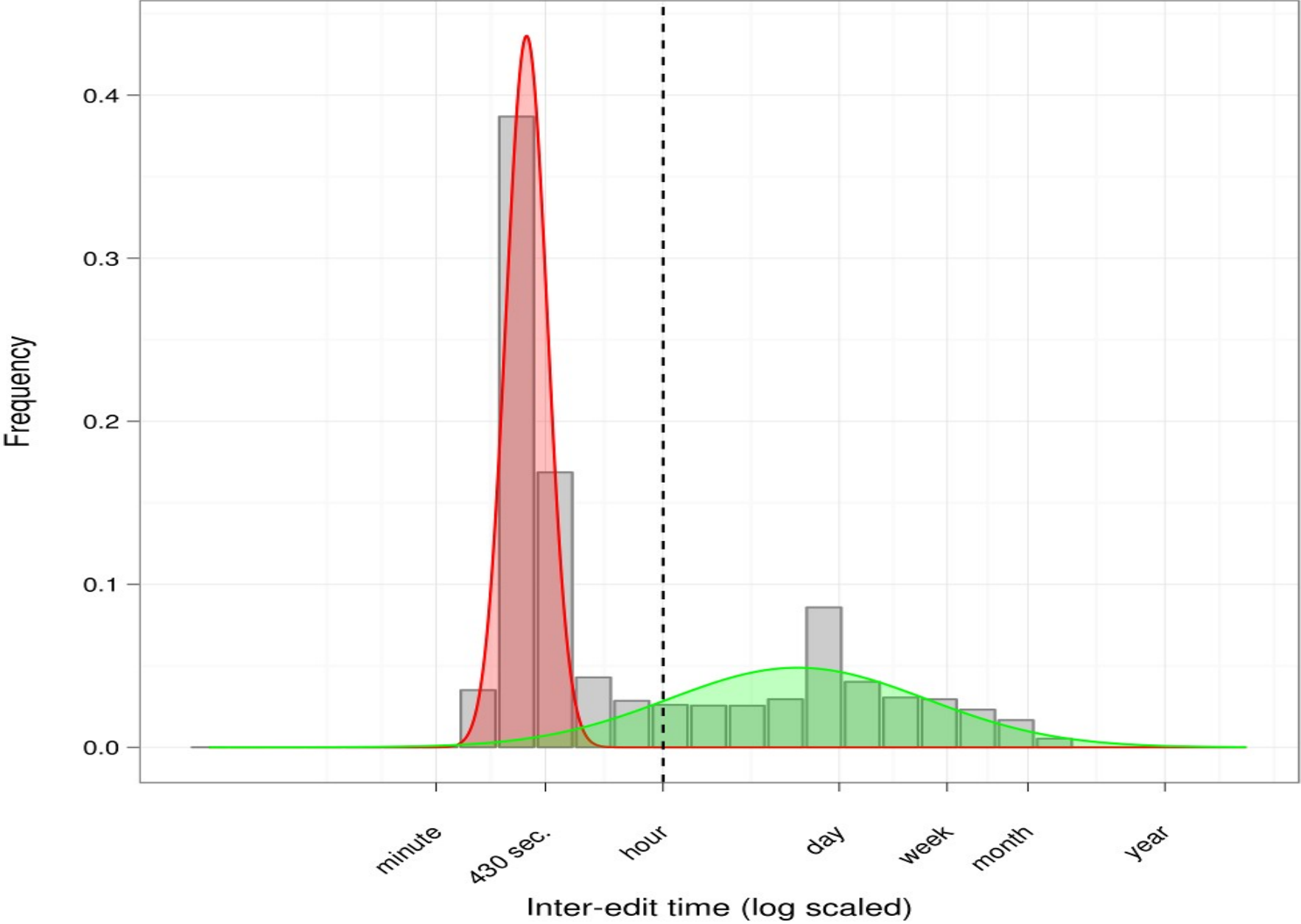
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- Beat on the UC algorithm:

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- Work out entropy added by each layer

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- Compare to mobile *edits*, where we have UUIDs

Measuring Mobile Sessions

- Beat on the UC algorithm:
- Work out entropy added by each layer
- Compare to mobile *edits*, where we have UUIDs
- Fix session algorithm:
- Make it identify all sessions associated with a UC

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- Explore alternative models:
- Breadth-first parser?

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- Breadth-first parser?
- Temporarily include `mw.session.id`?

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Code and graphics:
github.com/Ironholds/MobileSessions

Questions?