

Abstract Submitted  
for the DFD17 Meeting of  
The American Physical Society

**Aerosol emission during human speech** SIMA ASADI, ANTHONY S. WEXLER, CHRISTOPHER D. CAPP, University of California Davis, NICOLE M. BOUVIER, Icahn School of Medicine at Mt. Sinai, SANTIAGO BARREDA-CASTANON, WILLIAM D. RISTENPART, University of California Davis — We show that the rate of aerosol particle emission during healthy human speech is strongly correlated with the loudness (amplitude) of vocalization. Emission rates range from approximately 1 to 50 particles per second for quiet to loud amplitudes, regardless of language spoken (English, Spanish, Mandarin, or Arabic). Intriguingly, a small fraction of individuals behave as “super emitters,” consistently emitting an order of magnitude more aerosol particles than their peers. We interpret the results in terms of the egressive flowrate during vocalization, which is known to vary significantly for different types of vocalization and for different individuals. The results suggest that individual speech patterns could affect the probability of airborne disease transmission. The results also provide a possible explanation for the existence of “super spreaders” who transmit pathogens much more readily than average and who play a key role in the spread of epidemics.

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Date submitted: 01 Aug 2017

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