

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Reconfigurable mechanical properties of fire ant aggregations**

MICHAEL TENNENBAUM, ALBERTO FERNANDEZ-NIEVES, Georgia Institute of Technology — Fire ant aggregations are inherently active materials. Each ant converts its own chemical energy into motion, and it is the overall motion of all individual ants that contributes to the bulk material properties of the aggregation. So far we are unable to affect the activity level of the ants themselves. However, the ants go through cycles of activity which we can monitor by measuring the normal force exerted by the aggregation on the plate of a rheometer. We can then examine the properties of the aggregation as it evolves through these cycles and learn how the activity level affects the overall aggregation properties.

Michael Tennenbaum  
Georgia Institute of Technology

Date submitted: 11 Nov 2016

Electronic form version 1.4