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Free and constrained expansion of fire ant aggregations ALBERTO FERNANDEZ-NIEVES, CALEB ANDERSON, Physics. Georgia Tech — We revisit the classical free and constrained expansion of ideal gases with fire ant aggregations. We use rectangular parallel plates to confine fire ants to two-dimensions and watch how these expand when the plates are horizontal or when these are vertical. In the first case, the ants expand in a rather disorganized fashion, while in the second case, when there is work involved, the expansion is rather organized. The behavior is reminiscent of what is expected from the so called reversible process theorems of classical thermodynamics despite the ant aggregation is intrinsically out of equilibrium. This talk will focus on these results and in related observations in the same experimental setting.

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