Statistical Properties of Autonomous Flows in 2D Active Nematics
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Supplementary Information

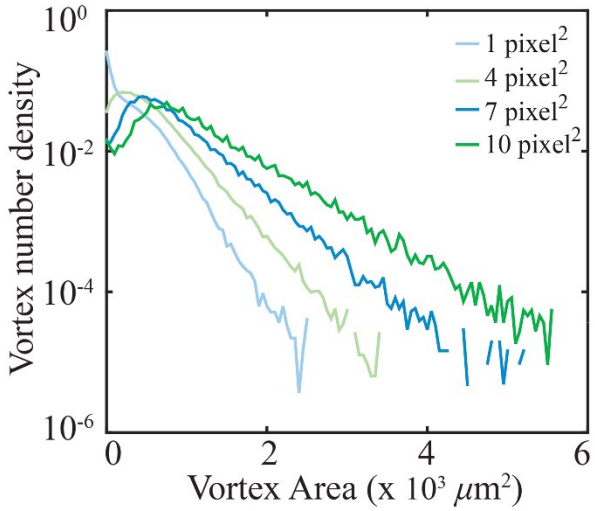

Figure S1: Distribution's Dependence on Okubo-Weiss Spacing For a single sample (100μM), the vortex area distributions obtained from different grid spacing. The size of the grid which the PIV and OW field are interpolated on affect the broadness of the distribution and therefore the measured active length scale. To be consistent across samples we took the grid spacing at which a peak at a_{min} was just recovered—in this example 4 pixel^2. This corresponds well to tuning the spacing "by-eye" so that the algorithm identifies vortices only where one can see vortices in the field.

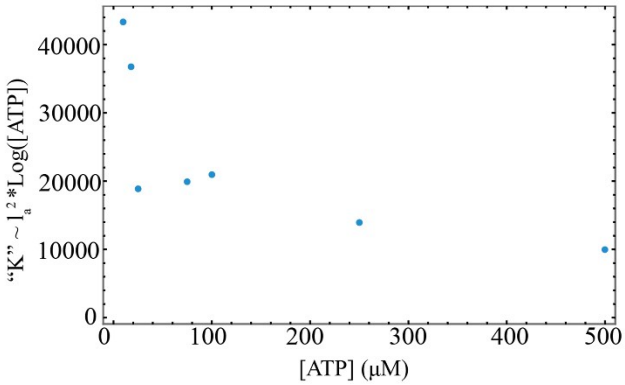

Figure S2: "K" vs log([ATP]) The dependence of the elastic constant, K on ATP concentration if we assume that $\alpha \sim log(\square)([ATP])$ so that $K \sim l_a^2 \log([ATP])$.

Supplementary Movie 1: Raw data of an active nematic at 10 μM ATP in which ~1:15,000 MTs is fluorescently labeled. The speckle pattern makes images suitable for extracting the velocity field using the particle image velocimetry. Movie is a representative snapshot of a much longer acquisition. Scale bar 100 μm.

Supplementary Movie 2: Raw data of an active nematic at 1000 μM ATP in which ~1:15,000 MTs is fluorescently labeled. The speckle pattern makes images suitable for extracting the velocity field using the particle image velocimetry. Scale bar 100 μm.