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Characterization of Intermittent and Continuous Dynamics in Jammed Aqueous Foam SAM STANWYCK, MICHAEL FOLKERTS, OLEG SHPYRKO, UC San Diego — We use optical laser diffraction in a multi-speckle detection scheme to investigate the mesoscale dynamics in aqueous foam. Using linear correlation and time-resolved correlation, we are able to analyze the slowing down of the rate of bubble rearrangement events during foam aging. We introduce Temporal Contrast Analysis, a novel statistical tool for analyzing these dynamics. Using Temporal Contrast Analysis we are able to show that there are two distinct dynamical components present in the foam: intermittent, avalanche-like dynamics and continuous, flow-like dynamics. We are able to separate these two components from each other and from the intrinsic statistical noise contribution, and independently analyze the slowing down of each component with age.

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