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The micro-macro link for liquid foam stability[1] ANNE-LAURE BIANCE, LPMCN, Université Lyon 1 et CNRS, ALINE DELBOS, OLIVIER PITOIS, LPMDI, Université Paris-Est Marne La vallée, LPMCN TEAM, LPMDI COLLABORATION — The experimental study of bubble rearrangements triggered artificially in both bubble clusters and liquid foams allow us to established a link between the stability of the system and the dynamical behaviour of foam films. More precisely, the amount of liquid available locally in the system has to be larger than a critical value to ensure the formation of transient films within dynamical conditions. This has been clearly attributed to a dynamical thickening effect of the fresh film, whose thickness is strongly dependent on the rheological properties of interfaces. A simple model is proposed to capture these new findings and shows good quantitative agreement with measurements for the critical liquid fraction of foam collapse, providing new insight in the understanding of the complex coupling between internal dynamics and stability of foams.

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