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Fizzing sound JULIETTE PIERRE, MATHIS POUJOL, REGIS WUNENBURGER, FRANOIS OLLIVIER, ARNAUD ANTKOWIAK, D'alembert Institute, CNRS, Sorbonne University — Gas-liquid systems are ubiquitous in industrial, food, biological or geophysical contexts. The popping noise of a bursting bubble, the crackle sounds of ageing foams, the whistling of nucleating water, the drumming of rain, the thud of degassing volcano magmas and the fizzing of champagne evidence the radiation of sound by these violent interfacial hydrodynamic events. Such events evolve according to various processes occurring at several different length scales and over several different time scales. In many of these out-of-equilibrium systems, conventional fast optical imaging method does not follow very high dynamics or get through opaque samples. In this presentation we will see that acoustics can help to read fast hydrodynamics events. We will focus on single hydrodynamic event : the bursting of a capillary bubble. The bursting of a millimeter bubble of gaz laying at the surface of a liquid bath evolves in various interfacial reconfiguration leading to a highly complex acoustic propagation in the surrounding media (liquid and gas).

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