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The Time Evolution of Streamer Discharges in Single and Multiple Bubbles in Water[1] SELMAN MUJOVIC, JOSEPH GROELE, JOHN FOSTER, University of Michigan — The interaction of plasma with liquid water lies at the heart of a variety of revisited technological applications ranging from water treatment to wound healing. Plasma ignition and propagation in water, however, is poorly understood. It has been theorized that plasma streamer propagation takes place in microbubbles, namely streamer bubble hopping. In this work, discharge development in single and multiple bubble acoustic systems is investigated using high-speed imaging and emission spectroscopy. Optical filters allow for time resolved measurements of specific chemical species as well. Better understanding of these breakdown processes will guide the construction of an effective plasma water purifier.

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