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Towards electric field measurements in liquid water by electro-optic Kerr effect[1] TOMAS HODER, Masaryk University, Czechia, PETR HOFFER, VACLAV PRUKNER, MILAN SIMEK, Institute of Plasma Physics, ASCR, Czechia — The fundamental understanding of the electrical discharges in liquid water, if initiated by nanosecond pulses with high voltage amplitudes, is still missing. In order to get detailed insight into the processes preceding the full discharge development and to support the theoretical models, the knowledge of the local electric field strength is important. We present our first results towards the electric field determination in liquid water using electro-optic Kerr effect with sub-nanosecond and sub-millimetre resolution. The developed novel methodology is applied at experimental conditions without discharge generation and its reliability and sensitivity are evaluated.

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