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The dynamics of light emission from micro-discharge array devices[1] J. WASKÖNIG, D. O'CONNELL, V. SCHULZ-VON DER GATHEN, J. WINTER, Center for Plasma Science and Technology, Ruhr University Bochum, Germany — Micro-discharges structured in arrays, of up to tens of thousands single devices, are becoming increasingly important with immense application potential. Investigations, in particular experimental, can be challenging on such discharges, however more detailed insight is essential for further development. One such array is investigated through phase and space resolved optical emission spectroscopy (PROES). Through these investigations insight into ignition and sustaining mechanisms of both the individual discharge devices and the array as a whole are obtained. It can be observed that emission is not continuous over the entire ac period, it occurs only twice in each cycle. The emission in both of these phases exhibits different signatures. Cross-talk between the individual devices can be observed through spatially resolved measurements. Funding: SFB 591, GRK 1051.

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Deborah O'Connell
Ruhr University Bochum

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