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**Sequential Double Ionization: The Timing of Release**[1]

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The timing of electron release in strong field double ionization poses great challenges both for conceptual definition and for conducting experimental measurement. Here we present coincidence momentum measurements of the doubly charged ion and of the two electrons arising from double ionization of Argon using elliptically (close to circularly) polarized laser pulses [1]. Based on a semi-classical model, the ionization times are calculated from the measured electron momenta across a large intensity range. Exploiting the attoclock technique [2] we have direct access to timings on a coarse and on a fine scale, similar to the hour and the minute hand of a clock. In our attoclock, the magnitude of the electron momenta follows the envelope of the laser pulse and gives a coarse timing for the electron releases (the hour hand), while the fine timing (the minute hand) is provided by the emission angle of the electrons. The first of our findings is that due to depletion the averaged ionization time moves towards the beginning of the pulse with increasing intensity, confirming the results of Maharjan et al. [3], and that the ion momentum distribution projected onto the minor polarization axis shows a bifurcation from a 3-peak to a 4-peak structure. This effect can be fully understood by modeling the process semi-classically in the independent electron approximation following the simple man's model [4]. The ionization time measurement performed with the attoclock shows that the release time of the first electron is in good agreement with the semi-classical simulation performed on the basis of Sequential Double Ionization (SDI), whereas the ionization of the second electron occurs significantly earlier than predicted. This observation suggests that electron correlation and other Non-Sequential Double Ionization (NSDI) mechanisms may play an important role also in the case of strong field double ionization by close-to-circularly polarized laser pulses.

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