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Evaluation of multi-pulse PIV for spatial resolution, velocity accuracy and acceleration measurement LIUYANG DING, RONALD ADRIAN, Arizona State University, SIVARAM GOGINENI, Spectral Energies LLC, KATHY PRESTRIDGE, Los Alamos National Laboratory — The performance of multi-pulse PIV is numerically evaluated based on PTV simulation. We compare triple-pulse and quadruple-pulse to conventional double-pulse PIV regarding their performance on spatial resolution, velocity and acceleration measurement. The optimization is achieved to minimize the combined error in position, velocity and acceleration. Multi-pulse technology is then tested by measuring simultaneous velocity and acceleration fields of a round impinging air jet. Experimental results from triple-pulse and quadruple-pulse are compared and discussed in terms of the accuracy and performance.

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