Future Perspectives on Defocus Particle Tracking, Saturday July 6th 2024 in Lisbon mailto: microfluidics@tu-ilmenau.de

- Please fill the following sections with your data and information (max. 1 page) -

1. Title:

Comparative measurements of wall shear stress characteristics in a zero pressure gradient turbulent boundary layer using multi-aperture defocussing micro PTV (MA-µPTV) and profile-PIV

2. Presenter (first name, name, affiliation, email):

Joachim Klinner, DLR Institute of Propulsion Technology Koeln, joachim.klinner@dlr.de

3. Talk intended for the section (please choose one):

"Uncertainty" () "New perspectives" (x)

4. Three main highlights of the intended talk (what are the main points, what is new, what is interesting for the community):

- Providing details on the image evaluation of defocused triplets targeting the stream and spanwise characteristics of wall-shear stress
- Mitigation of deviations from self-similarity of triplet images through suitable calibration
- Providing comparisons of near-wall velocity profiles and friction velocities derived from MA μ PTV and profile PIV in a turbulent channel flow (585 \leq Re $_{\tau}\leq$ 1762)

5. Figure/graphical abstract (a figure is worth a thousand words!)

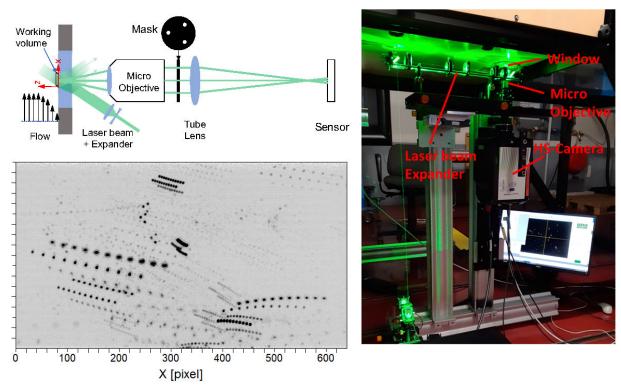


Fig: $top\ left$ Optical arrangement for ma- μ PTV in boundary layers using single window access; bottom left Composite image showing particle tracks obtained by overlaying 10 successive images of tracers in a turbulent boundary layer; right Photograph of the optical setup for measurements at the onemetre low-speed wind tunnel at the DLR Göttingen.