area 64x64 pixels. Higher values of standard deviation in finer Res 4 are caused by sharper interpretation of vortex structures running across the area of interest. And obviously that sharper caught vortexes with expressible borders and shapes decrease the mean velocities of the flow.

4 Conclusion

Mixing process is currently under research using different types of methods and analysis. PIV method gives perfect opportunity to discover vortex structures contained in the flow behind the mixing impeller. Parameters of mixing process, looses, dissipation coefficient, effectivity and many others can be obtained from these PIV results. This study proved the ability of PIV system to get data suitable for that type of analysis, but also revealed details of measurement procedures which must be taken under consideration.

The flow behind the impeller has turbulent pulsating characteristic. When statistical analysis of the data is made, mean velocity flow field and flow profiles are influenced by these vortexes. Study proved the dependence of the mean flow field, respectively mean velocity profiles on the degree of spatial resolution of recorded PIV data. Finer resolution of images causes sharper vortex structures, higher standard deviations and from that effected decreased maximal velocities in the flow profile. That dependence was proved in different flow regimes (rounds of the impeller) and also in different liquids – water, ethylenglycol at different concentration.

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