Random uncertainty estimates of PIV measurements using correlation statistics STEVE WERELEY, Purdue University — In recent years researchers have made efforts to extract scalar and even tensor quantities from the characteristics of the correlation peak. These have included temperature (Wereley, 2002, 2010), velocity distribution (Wereley 2006, Westerweel $\sim$2006), particle hydrodynamic size (Wereley 2008) and even Reynolds stresses (Kaehler, $\sim$2008). It is also possible to extract random uncertainty estimates from the correlation peak characteristics—provided enough is known about the flow. Obtaining uncertainty estimates in this way would provide local estimates of uncertainty rather than the current global rules of thumb that are relied upon.

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