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Devolpment and Evaluation of an Echo Particle Image Velocimetry (EPIV) System[1] NICHOLAS DEMARCHI, CHRISTOPHER WHITE, University of New Hampshire — An echo particle image velocimetry (EPIV) system capable of acquiring planar fields of velocity in optically opaque fluids or through optically opaque geometries is described, and validation measurements in Hagen-Poiseiulle (pipe) flow are reported. The accuracy limitation and measurement error of the EPIV measurements are assessed by comparing them to theoretically expected flow fields and optical PIV measurements acquired in the same facility. Lastly, the practical issues associated with building a EPIV system are described.

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