

Abstract Submitted  
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**Surface Pressure Measurements from Multiline Single-Component Molecular Tagging Velocimetry**<sup>1</sup> DAVID A. OLSON, AHMED M. NAGUIB, MANOOCH EHR M. KOOCHESFAHANI, Michigan State University — This study considers the feasibility of estimating the surface pressure distribution based on high-resolution single-component molecular tagging velocimetry. This approach would be helpful in situations where it is not practical to instrument a surface with pressure taps/sensors. The method relies on the connection between the surface pressure gradient and the second order wall-normal derivative of the velocity tangent to the wall. We show the application of this approach to measuring the surface pressure distribution on the circular cylinder in cross flow at  $Re = 6,000$ . Results compare favorably with data in the literature.

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