## Pressure Fluctuations in a High-Reynolds-Number Turbulent Boundary Layer over Rough Surfaces of Different Configurations

## Liselle A. Joseph

Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in partial fulfilment of the requirements for the degree of

> Doctor of Philosophy in Aerospace Engineering

William J. Devenport, Chair W. Nathan Alexander Aurélien Borgoltz Theodore M. Farabee K. Todd Lowe Roger L. Simpson

> August 23, 2017 Blacksburg, Virginia

Keywords: turbulent boundary layer, pressure spectra, zero-pressure gradient, rough walls, scaling laws

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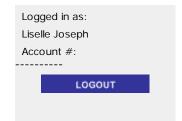
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Office: 616 McBryde Hall

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