

Abstract Submitted  
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**Wall-Modeled Large Eddy Simulation (WMLES) of High-Lift Aircraft**<sup>1</sup> KONRAD GOC, SANJEEB BOSE, PARVIZ MOIN, Stanford University — Wall-Modeled Large Eddy Simulations with an equilibrium wall model (WMLES) are carried out on the JAXA high-lift model at various angles of attack. The configuration features the geometric complexity of deployed slats, flaps, and associated bracketry with flow in the low Mach, high Reynolds number regime (e.g., take-off conditions). Salient flow features arising from smooth-body and geometrically-imposed separation are captured. The lift curve slope predicted by WMLES is well-characterized near the stall flight condition. Good agreement with experimental sectional pressure measurements is obtained. Calculations that include the wind tunnel walls and half-model mount are compared to uncorrected experimental data to mitigate wind tunnel correction uncertainty. Simulations were performed using the CharLES code at core-hour costs comparable to some RANS calculations of the same configuration (Rumsey, 2018).

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