Direct numerical simulation of stably stratified Ekman flow over a wavy surface SUNGWON LEE, S. M. IMAN GOHARI, SUTANU SARKAR, Univ of California - San Diego, UNIV OF CALIFORNIA - SAN DIEGO TEAM — The stratified Ekman layer over a wavy surface is examined using DNS. The neutral Ekman layer is subjected to a stabilizing cooling flux for approximately an inertial period. The nondimensional amplitude and aspect ratio of the waviness are changed. For sufficiently strong cooling flux, the flat-bottom case exhibits initial collapse of turbulence, emergence of a low-level jet and eventual turbulence recovery. The wavy-surface results are compared with the flat-bottom case to understand how surface roughness influences buoyancy effects in the atmospheric boundary layer.

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