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The impact of surface conditions on gas exchange across an air/water interface during mixed convection R.J. LEE, J.R. SAYLOR, Clemson University — The effect of surface conditions on the transport of oxygen across an air/water interface was investigated experimentally for mixed convection conditions. A wind/water tunnel was used to gather the requisite data and the resulting Sherwood numbers are presented as a function of the Rayleigh and Reynolds numbers. Wind speeds for both clean and surfactant covered surfaces were varied from 1 to 4 m/s in increments of 1 m/s. Water surfaces devoid of surfactant monolayers were studied, along with oleyl alcohol covered water surfaces. The surfactant monolayer existing on a tap water surface was also studied. The results show the effect of surface conditions, as well as the relative importance of free and forced convection on gas exchange.

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