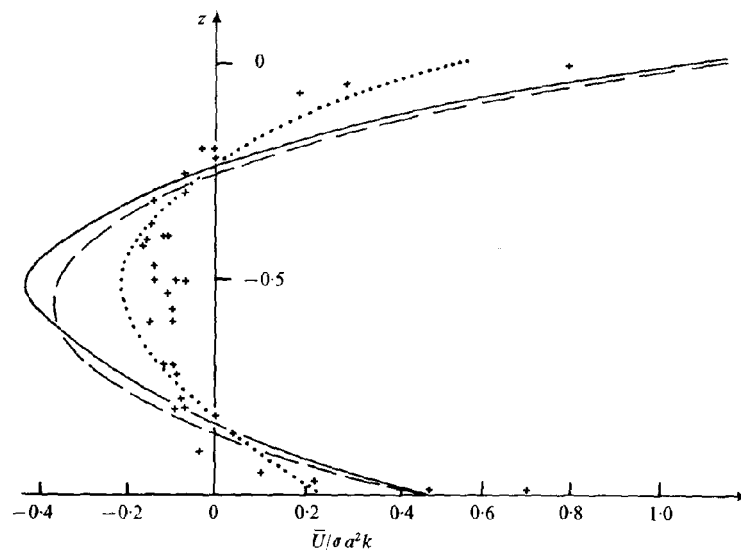


Both theory and experiment have struggled to capture the quantitative aspects of true “Stokes drift”.

Most experiments and theory capture in a qualitative sense of the vertical distribution of the Stokes drift velocity (see below – Fig. 5, Liu and Davies, 1977). Other theories and experimental data sets have been put forth (Craig, 1982; Liu and Davies, 1977; Mei et al., 1972). None of them can match the laboratory data that is considered most realistic (Russell and Osorio, 1957). As Craig (1982) states, “a truly definitive experiment on drift profiles is still lacking, so long after Stokes’s pioneering paper.” In the future, Lagrangian attempts may hold some promise (Phillips, 2001).



However, for our purposes, all of these theories reflect the same diffusion from the boundaries seen in the original work of Longuet-Higgins (1953).