David T. Ho

Rain Induced Air-water Gas Exchange: Global Effects

During the course of my studies at LDEO, I have performed systematic laboratory studies on the effect of rain on air-water gas exchange *[Ho et. al,* 1997], and examined the mechanism behind this effect *[Ho et. al,* 1999). In *Ho et al.* [1997), I had found that the gas transfer velocity increases systematically with the kinetic energy flux *(KEF)* to the water surface supplied by the raindrops. In *Ho et al.* [1999), using a combination of gas tracer (He, N20, SF6), I was able to separate out the contribution of bubbles to the measured rain-induced gas exchange and determine that air-water gas exchange is dominated by turbulence-driven exchange processes. Bubbles contributed anywhere from 0 to 20% to the total gas exchange, depending on rain rate, drop size and the solubility of the gas tracer.