



Example fluctuations in downward irradiance measured with the Porcupine irradiance sensor (670 nm)

Time series for the normalized irradiance,  $X(t) = E_d(t) / \langle E_d \rangle$  in the open ocean south of the Hawaiian Islands on September 3, 2009 at 10:20 A.M. local time under variable sky conditions with intermittent cloud cover.

Depth  $z = 1.7$  m, solar zenith angle =  $32^\circ$ , wind speed  $W = 10 \text{ m s}^{-1}$ , and the beam attenuation coefficient of seawater at 555 nm,  $c(555) = 0.10 \text{ m}^{-1}$ .