

***DETERMINATION OF A NUMERICAL RELATIONSHIP BETWEEN RAIN  
RADAR REFLECTIVITY Z AND SEA SURFACE ELEVATION VARIANCE DUE  
TO RAIN***

**Sobieski Piotr, Craeye, Blivenfrancis. L.**

Telecommunications & Remote Sensing Lab, Universite catholique de Louvain,  
pl. du Levant, 2  
Louvain-la-Neuve, BE, Belgium 1348

The additional roughness due to drops impacting the sea surface introduces a bias on wind speed estimates obtained from satellite scatterometric measurements. This roughness essentially depends on the rain content in very large drops. The estimate of this contribution highly depends on the DSD. However, it has been observed that the reflectivity of the drops falling in the atmosphere has a drop-size dependence that is very similar to that of the surface roughness induced by rain. From a numerical analysis on various DSD's, rain rates and frequencies ranging from 3 to 94 GHz a relationship that allows to link directly the rain radar reflectivity  $Z$  to sea surface elevation variance resulting from drop impact has been established not dependent on the rain DSD model