



Estimates of net heat fluxes over the Atlantic Ocean

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Many studies have been undertaken to evaluate turbulent heat fluxes at the ocean-atmosphere interface; less was done on the total net heat flux. Results over the Atlantic Sector (50° S to 50° N) for a three year period show that differences in the turbulent fluxes among two widely used approaches are overshadowed by differences in the radiative fluxes. While the maximum difference in sensible and latent heat fluxes can be about 30 W/m², the mean values for latent heat fluxes are -2.27 W/m² for January and 5.40 W/m² for July. For sensible heat they are 2.82 W/m² for January and 5.64 W/m² for July. We show that the maximum difference in net radiative fluxes can be as high as 55 W/m², for January, the mean difference in net SW is 6.31 W/m² and in net LW it is 12.14 W/m². For July, the respective differences are -9.99 W/m² for the SW and 14.31 W/m² for the LW. Relationships between the fluxes and satellite derived surface wind-speed, total precipitable water and cloud cover provide insight on the dominant processes that control the net heat flux. This study is intended to present an estimate of uncertainties that still exist in the net heat flux at the ocean-atmosphere interface.