

Challenges in the use of hyperspectral infrared radiance observations in coupled global ocean/atmosphere assimilation systems

Chris Burrows⁽¹⁾, Tony McNally⁽¹⁾, Tracy Scanlon⁽¹⁾, Angela Benedetti⁽¹⁾ and Patricia De Rosnay⁽¹⁾.

⁽¹⁾ *ECMWF*

Shinfield Park, Reading, RG2 9AX, United Kingdom.

chris.burrows@ecmwf.int

ABSTRACT

ECMWF is using surface-sensitive channels from IASI and other hyperspectral infrared instruments in order to constrain sea surface temperature (SST) in a coupled ocean/atmosphere data assimilation (DA) system. There are challenges in that these “interface” observations are sensitive not only to skin temperature (SKT) but also to clouds, ozone and water vapour. Mechanisms have been identified which can lead to atmospheric errors aliasing into erroneous estimates of SKT (and SST). The details of these mechanisms, along with proposed solutions will be presented here.