



UV radiation below an Arctic vortex with severe ozone depletion

B. M. Knudsen (1), H. Jönck-Sørensen (1), P. Eriksen (1), B. J. Johnsen (2), G. Bodeker (3)

(1) Danish Meteorological Institute, (2) Norwegian Radiation Protection Authority, (3) National Institute of Water and Atmospheric Research

UV levels below the severely depleted Arctic vortices in spring 1996 and 1997 were substantially elevated. On average the UV increased 36 and 33 % relative to the 1979-1981 mean assuming clear skies from day 80-100 in 1996 and 1997, respectively. On clear sky days large regions of the Arctic experienced maximum UV increases exceeding 70 and 60 % on single days in 1996 and 1997, respectively. UV levels in the Arctic spring are comparable to summer levels on biologically relevant vertical surfaces at snow-covered sites. A minor fraction of these increases are not anthropogenic, but have a dynamical origin.