



Arctic surface ozone depletions from ozone soundings and surface measurements

David Tarasick

Environment Canada, Experimental Studies Division, Downsview, ON, Canada (david.tarasick@ec.gc.ca)

Episodes of ozone depletion in the lowermost Arctic atmosphere (0-2 km) in the polar spring are understood to result from catalytic reactions involving bromine derived from sea salt. Arctic sites consistently show ozone depletion in the surface boundary layer throughout the spring months, sufficient at some sites to markedly affect the annual cycle, and produce an ozone minimum in spring. Although this is a natural phenomenon – the long ozonesonde record at Resolute shows depletions since the beginning of the record in 1966 – it appears to be changing: the (recently re-evaluated) Resolute record also shows an increase in their frequency over the period 1966-2013 of $6.8 \pm 3.7\%$ per decade (95% confidence limits). In addition, surface sites show a shift toward increasing frequency earlier in the year. These changes are examined in the context of other changes in the Arctic boundary layer.