

BROMINE OXIDE FORMATION OVER THE DEAD SEA VALLEY, ISRAEL**M. Peleg, V. Matveev, E. Tas, M. Luria***The Institute of Earth Sciences, The Hebrew University, Jerusalem, Israel*

The present investigation describes the extent of bromine oxide formation along the Dead Sea Valley both on a spatial and temporal basis. The DOAS (differential optical absorption spectroscopy) technique was employed to measure for BrO. A study performed simultaneously at 3 sites (north, mid and south) indicated that BrO is formed all over the Dead Sea valley up to levels above 150 ppt. On a number of occasions BrO was observed simultaneously at all three sites. The frequency of BrO appearance during winter was less than during summer although the BrO levels were of similar levels albeit the temperatures and global radiation at winter were half those for summer. BrO was also observed several kilometers south of the Dead Sea itself with levels reaching 100 ppt. Measurements performed at a site some 400 meters above the Dead Sea water level during summer also showed the frequent presence of BrO although maximum values reached only half of those observed at the water levels. The present study indicates that BrO is present all along the Dead Sea Valley, even to distances of several kilometers outside of the Dead Sea itself and up to altitudes of at least 400 meters above the water level. The frequency and intensity of BrO formation increases with proximity to the salt evaporation ponds located in the southern region of the Dead Sea. It is highly probable that BrO production occurs not only over the dry salt but also over the salt-water surfaces.