

IO AND BRO IDENTIFICATION AT THE DEAD SEA, ISRAEL**V. Matveev**, E. Tas, M. Luria, M. Peleg*The Institute of Earth Sciences, The Hebrew University, Jerusalem, Israel*

Bromine oxide has been previously identified up to levels of almost 200 ppt in a number of studies performed at the Dead Sea in Israel. The elevated BrO levels were always accompanied by extensive ozone depletions. However model simulation studies could not explain these extensive ozone depletions based solely on the presence of BrO. An investigation was therefore performed in attempt to identify the presence of iodine oxide in addition to BrO. The campaign was performed during July 2003 at the Dead Sea utilizing two DOAS (differential optical absorption spectroscopy) instruments operating in parallel at a site midway along the Dead Sea. The absorption light path for the IO was 8.5 km while for BrO measurements the distance was 3.6 km. The IO spectra were identified using two absorption lines at 427.6 and 436.4 nm (spectral resolution ~ 0.26 nm) after correction for NO₂ and lamp spectra. The fitting procedure for BrO was based on 4 absorption lines at 325.0, 329.2, 333.5, and 338.3 nm (spectral resolution ~ 0.5 nm). IO was detected on almost all measuring days with a maximum observed level of 10.5 ppt (detection limit ~ 3.5 ppt). BrO was repeatedly observed at the site with a maximum measured value of 62.5 ppt. The ratio of BrO and IO concentration varied between 4-5 up to 10. The study clearly indicates that IO is frequently present at the Dead Sea and may play an important part in ozone destruction processes.