

# **Mediterranean Sea Level Changes over the Period 1961-2000**

**Boris SHIRMAN and Yossi MELZER, Israel**

**Key words:** Sea level monitoring, Tide gauge operation, Tide gauge Bench Marks.

## **ABSTRACT**

The mean value of the Mediterranean Sea level defines the vertical datum of the geodetic network in Israel. The Survey of Israel (SOI) has been performing tide measurements along the Mediterranean Sea coast since the twenties. Since 1996 SOI has conducted the measurements by digital instruments with a resolution of 1 cm and data recording every 5 minutes. Identical instruments were installed at the Tel-Aviv, Ashdod and Ashqelon stations.

The aims of the work are to distinguish tide long time periods and to compare average tide level with the Israeli vertical datum. The data from Ashdod, Yafo, Tel-Aviv and Ashqelon for the period 1958 – 2001 were used.

The following results were obtained:

- a) Tide level changes caused by influences from the Moon and the Sun are in the same phase and amplitude along the coast between Tel-Aviv and Ashqelon. This justifies linking together data from different stations into a continuous time series of 39 years.
- b) Spectral analysis of the tide level data indicates periods of about 20 years, one year and about half year.
- c) The average tide level of all period investigated is 6 cm relative to the vertical Israeli datum.
- d) Between 1973-2000 there is an indication of sea level rise of about 15 cm.

## **CONTACT**

Boris Shirman and Yossi Melzer  
Survey of Israel  
1, Lincoln  
Tel-Aviv  
ISRAEL  
Tel. + 972 3 623 1919  
Fax + 972 3 623 1806  
Email: boris@soi.gov.il and melzer@netvision.net.il

---

TS4.6 Vertical Datums and Sea Levels  
Boris Shirman and Yossi Melzer  
Mediterranean Sea Level Changes over the Period 1961-2000

FIG XXII International Congress  
Washington, D.C. USA, April 19-26 2002