Geophysical Research Abstracts, Vol. 8, 02361, 2006
SRef-ID: 1607-7962/gra/EGU06-A-02361


# Morphology of gypsum and halite in some gypsum rich soils of Bam region (southeast Iran)

**S. Mahmoodi**, E. Mogheiseh and A. Heidari

Soil Sci. Dept. Soil & Water Engineering College, Campus of Agriculture and Natural Resources, Tehran University (smahmodi@ut.ac.ir / Phone: +982612231787)

Gypsum and halite are common constituents of soils in the hot and dry region of Bam (southeast Iran), and are originally related to their soil parent materials (Neocene formations, dominated by gypsiferous marls). The morphological, physico-chemical and micromorphological studies on 8 pedons show that a mixed desert pavement and gypsum crust at the surface covers the soil. The amount of gypsum is the highest in this crust and the directly underlain layer (>60%), and it consists of loose usually silt size fibrous gypsum. Below, at depth of almost 15 cm there is a rather thick (>20 cm.) hard cemented layer, composed of gypsum and halite. The distribution pattern of gypsum and halite within this hard layer shows dominantly a zonation type. Gypsum is maximum at the top and sharply decreases towards the lower boundary of the hard layer. In contrary the amount of halite increases with increasing depth towards the bottom of this layer. The morphology of fine gypsum at the top of this hard layer is usually fibrous or granular, but turns to more lenticular within the cemented layer. Halite forms almost perfect cubic crystals below the top gypsum layer, which can be seen both under the petrographic microscope and by SEM method. Below, towards the bottom of the soil profiles, the amount of gypsum and halite decreases drastically, but again at depth (> 100cm) it reaches the second maximum zone. At this depth gypsums usually occur as pendants under the gravels. The coarse elongated lath shape gypsums are perpendicularly oriented on the gravel surfaces. The morphology and distribution pattern of these components are used as indexes for climatological changes and environmental characteristics in this area.

Key words: Bam, distribution pattern, morphology, gypsum, and halite.