Geophysical Research Abstracts
Vol. 13, EGU2011-4459, 2011
EGU General Assembly 2011

Observation of Moon polar shadow regions from comparative analysis of LEND and LOLA data onboard LRO mission

Maxim Litvak, Igor Mitrofanov, Anton Sanin, and the LEND Team
Space Research Institute, Laboratory, Moscow, Russian Federation (litvak@mx.iki.rssi.ru)

Observations made by Bistatic Radar onboard Clementine spacecraft and Lunar Prospector Neutron Spectrometer (LPNS) suggested that deposits of pure water ice might exist in permanently shadowed regions (PSRs) near the lunar south pole. The LPNS revealed a significant suppression of epithermal neutrons around the both lunar poles above 70° latitude which was interpreted as a possible signature of hydrogen enhancement or even presence of water ice distributed within PSRs areas. But complicated model dependent data deconvolution and low spatial resolution of LPNS instrument did not allow to find direct correspondence between deficit of neutron flux and local PSR areas with sizes less than 50 km.
Here we present Lunar Exploration Neutron Detector (LEND) data analysis to test variations of moon neutron flux (as a signature of hydrogen distribution) at south and north moon poles and to study PSRs areas with sizes $\sim$ 10 km defined from Lunar Orbiter Laser Altimeter (LOLA) data.