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# Geoanalyses of Lunokhods' regions for future Lunar missions and data access via Geoportal

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**Introduction:** The Soviet rover missions Lunokhod-1 and -2 were launched at the beginning of $70^{th}$ (Luna-17 in October 1971 and Luna-21 in January 1973 respectively). The main goals of the both missions were to study Moon surface *in situ*. The history of the Lunokhods' missions came back into focus recently, when the Lunar Reconnaissance Orbiter obtained high resolutions images.

**Sources.** For our work we used various data: LROC Narrow Angle Camera (LRO NAC) images, 0.3-1 m/pixel [7, 11]; DEMs with different resolution: LRO NAC DEM, 1-5 m/pixel [9]; Kaguya DEM, 7.5 m/pixel [10]; Lunokhods' stereo panoramas and early cartography information [1, 8].

**Methodolody:** We collected all data as spatial database (Geodatabase) which includes various derived products. Based on methods developed earlier [4, 6], rovers wheel tracks and craters entire study regions were mapped. High resolution DEMs allow calculate of various morphometric parameters of the Lunokhods' regions which provide better understanding processes on lunar surface [2, 5]. Method of detailed morphology analyses developed for study area now used for investigation of the Luna-Glob and Luna-Resource landing missions which are planned to the south pole of the Moon.

**Data access:** We are developing easy access to the planetary data based on web and spatial technology (Geoportal). Geoportal provides the ability to view spatial data in the web-browser, displays different layers in the same area at different scales turns the web. Lunokhods' data point features were created for each station of rover routes where panoramas were been recorded. So GIS project provide an easy access to non-spatial image database and can involve these information in their spatial context.

**Conclusions:** During Lunokhods' missions early topography data of the traverses were accurate for most areas. Modern estimating these results based on the new LRO data provide comparative studies in lunar geology and morphology. We show that these data can be used for detailed mapping of landing sites for future lunar exploration missions (Luna-Globe and Luna-Recourse). Using PDS4 standard [3] we are developing Geoportal for easy access to the Lunokhods' panoramas and derived products based on results of newest lunar missions.

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