

19th IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND  
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Systems and Infrastructures to Implement Sustainable Space Development and Settlement - Technologies  
(2B)

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STUDY OF AN OPTIMAL AND OF RAPID EXECUTION SUPERFICIAL FOUNDATION THAT  
GUARANTEES THE STRUCTURAL INTEGRITY BETWEEN THE HABITAT AND A LUNAR SOIL

**Abstract**

Any architectural or civil engineering project needs a supporting element to stay up, it means a foundation, the connection between soil and a building or an infrastructure. So foundation constitutes the fundamental element of a construction of any kind. On earth it is a very important element, but it constitutes an even more important element on the surface of the Moon. The lunar surface is subjected to large gradients and thermal expansions, and to a high seismic activity with up to four different types of moonquakes, which compromise structural stability. Thus, this paper addresses which type of superficial foundation is the most suitable to be used in an environment of such characteristics, taking into account that its execution should be simple and of rapid installation, allowing its implementation in the most efficient manner since at initial stages of lunar human occupation both technology and the use of local resources will still be in a primary state of development.