

**FIGURES OF MERIT FOR LUNAR SIMULANTS.** Frederick A. Slane<sup>1</sup> and Douglas L. Rickman<sup>2</sup>, <sup>1</sup>Space Infrastructure Foundation (731 N Tejon Street, Colorado Springs, CO 80903, freds@spacestandards.org), <sup>2</sup>NASA/MSFC (full Global Hydrology and Climate Center NSSTC/MSFC/NASA 320 Sparkman Drive, Huntsville, AL 35805, doug.rickman@nasa.gov).

**Introduction:** The collection and analysis of lunar samples from 1969 to present has yielded large amounts of data. Published analyses give some idea of the complex nature of the regolith at all scales, rocks, soils and the smaller particulates commonly referred to as dust. Data recently acquired in support of NASA's simulant effort has markedly increased our knowledge and quantitatively demonstrates that complexity. It is anticipated that future analyses will further add to the known complexity. In an effort to communicate among the diverse technical communities performing research on or research using regolith samples and simulants, a set of Figures of Merit (FoM) have been devised. The objective is to allow consistent and concise comparative communication between researchers from multiple organizations and nations engaged in lunar exploration. This paper describes Figures of Merit in a draft international standard for Lunar Simulants. The FoM methodology uses scientific understanding of the lunar samples to formulate parameters which are reproducibly quantifiable. Contaminants and impurities in the samples are also addressed.