ABSTRACT: Constellation Coverage Analysis

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The design of satellite constellations require an understanding of the dynamic global coverage provided by the constellations. Even for a small constellation with a simple circular orbit propagator, the combinatorial nature of the analysis frequently renders the problem intractable. Particularly for the initial design phase where the orbital parameters are still fluid and undetermined , the coverage information is crucial to evaluate the performance of the constellation design. We have developed a very fast algorithm for determining the constellation global coverage dynamically using simple image processing techniques. This approach combined with ergodic coverage theory' presents a fast, powerful and simple method for the analysis of global constellation coverage.

*Lo, M., The Invariant Measure for the Satellite Ground Station View Period Problem, NATO Advanced Study Institute, S'Agaro, Spain Juno 19-30, 1995