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## A ground track-based approach to design satellite constellations

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**Abstract.** Following an approach based on ground track analysis, original and compact relationships which permit the construction of ground track patterns and the determination of satellite arrangements able to generate appropriate track distance and revisit frequency over a given area are presented. These equations are valid in the general case of elliptical orbit and can easily be implemented in computer codes devoted to the design of single and multi-plane satellite constellations.

**Keywords:** satellite constellations; ground track; periodic orbit.

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