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Minimal Surfaces whose Gauss Map Covers Periodically the Pointed Upper Half-Sphere Exactly Once

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Abstract. We identify nonparametric minimal surfaces S which have the property that their Gauss map \vec{n} is periodic and covers the upper half-sphere minus the point $(0, 0, 1)$ exactly once on each horizontal half-strip of height 2π . This leads us to study periodic harmonic mappings defined on the left half-plane and univalent logharmonic mappings defined on the unit disk.

Keywords. Harmonic mappings, minimal surfaces.

2000 MSC. Primary 30C55; Secondary 30C62, 49Q05.

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