Interpolation by elliptic functions†

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Abstract

This is a mixed type paper: we define and list basic properties of elliptic functions, and consider problems of different types of interpolations by these functions.

Keywords: Elliptic functions, interpolation.
MSC: Primary 33E05, 30E05; Secondary 41A05.

§1. Definitions

Let \( \mathbb{C}, \mathbb{R}, \mathbb{Z} \) denote the set of complex numbers, real numbers and integers, respectively. Let \( 0 \neq \omega_1, \omega_2 \in \mathbb{C}, \omega_1/\omega_2 \in \mathbb{C} \setminus \mathbb{R} \), and define

\[
\Omega := \{m\omega_1 + n\omega_2 : m, n \in \mathbb{Z}\}.
\]

\( \Omega \) is an infinite set of lattice points in \( \mathbb{C} \). We will say that \( z_1 \equiv z_2 \pmod{\Omega} \) if and only if \( z_1 - z_2 \in \Omega \). Further let

\[
Q := \{u\omega_1 + v\omega_2 : 0 \leq u, v < 1\}.
\]

This is a half-open parallelogram with vertices 0, \( \omega_1, \omega_2, \omega_1 + \omega_2 \).

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