

Year: 2018

Vol.: 93

Fasc.: 1-2

**Title:** A domain containing all zeros of the partial theta function

**Author(s):** Vladimir Petrov Kostov

We consider the partial theta function, i.e., the sum of the bivariate series  $\theta(q, z) := \sum_{j=0}^{\infty} q^{j(j+1)/2} z^j$  for  $q \in (-1, 1)$ ,  $z \in \mathbb{C}$ . We show that for any value of the parameter  $q \in (0, 1)$ , all zeros of the function  $\theta(q, \cdot)$  belong to the domain  $\{\operatorname{Re} z < 0, |\operatorname{Im} z| < 132\} \cup \{\operatorname{Re} z \geq 0, |z| < 18\}$ . For  $q \in (-1, 0)$ , all zeros belong to the strip  $\{|\operatorname{Im} z| < 132\}$ .

**Address:**

Vladimir Petrov Kostov  
Université Côte d'Azur  
CNRS, LJAD  
Parc Valrose  
06108 Nice Cedex 2  
France