

**Title:** On the equation  $F(n^3) = F(n^3 - 1) + D$  and some conjectures

**Author(s):** Imre Kátai, Bui Minh Mai Khanh and Bui Minh Phong

We prove that if the complex number  $D$  and the completely multiplicative function  $F$  satisfy the equation  $F(n^3) = F(n^3 - 1) + D$  for every positive integer  $n > 1$ , then  $F$  is the identity function if  $D \neq 0$ . In the case  $D = 0$ , there are two solutions  $F$ . We also state three conjectures and prove some partial results.

**Address:**

Imre Kátai  
Department of Computer Algebra  
ELTE  
Pázmány Péter sétány 1/C  
H-1117 Budapest  
Hungary

**Address:**

Bui Minh Mai Khanh  
Department of Computer Algebra  
ELTE  
Pázmány Péter sétány 1/C  
H-1117 Budapest  
Hungary

**Address:**

Bui Minh Phong  
Department of Computer Algebra  
ELTE  
Pázmány Péter sétány 1/C  
H-1117 Budapest  
Hungary