

1135-AI-382

Nathan Kaplan* (nckaplan@math.uci.edu), Department of Mathematics, 340 Rowland Hall, Irvine, CA 92697. *Counting Numerical Semigroups*.

A numerical semigroup S is an additive submonoid of $\mathbb{N}_0 = \{0, 1, 2, \dots\}$ where $\mathbb{N}_0 \setminus S$ is finite. The size of $\mathbb{N}_0 \setminus S$ is called the genus of S . Let $N(g)$ be the number of numerical semigroups of genus g . How does this sequence behave?

Bras-Amorós computed the first 50 values of $N(g)$ and noticed some striking patterns. She conjectured that $N(g)$ grows approximately as fast as the Fibonacci sequence and that $N(g-1) + N(g-2) \leq N(g)$. Zhai proved the conjecture on the Fibonacci-like growth of $N(g)$, but even the weaker conjecture that $N(g-1) \leq N(g)$ remains unsolved. We will give an overview of problems about counting numerical semigroups, highlighting some accessible questions that remain open. (Received August 29, 2017)