MINIMUM OPERATIONS FOR COMPUTING INTEGER COMPLEXITY AND ITS APPLICATION

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Abstract

Computing the complexity of an integer is the task to find how many one's are sufficient to construct the number. The progresses have been made in the past; however, the mathematical problem is still pending. The reason is simple as we can mainly use the computer to tackle the issue. In this paper, we begin with the finding of the maximum and minimum complexities of the integer set. Then, we defined the upper and lower dimension of the integer and relate two minimum operation methods for computing the integer complexity, and finally compare the two along with the interesting results, on which we put forward two conjectures. By using either the minimum additions or the multiplications method to compute the integer complexity, we wish to gain a better understanding of the fundamental properties of number's dimension, and eventually to find a potential application for the theorem in the emerging Internet market.