**Recommended changes:**

**Title:**

Change

“Symbolic Set Theory for Scientists: A Computer Science Perspective Paula Medina version”

To

“Symbolic Set Theory for Scientists: A Computer Science Perspective”

**Authors:** Move yourself to first author.

**Abstract (acronyms should not be used in the abstract):**

Computer scientists perceive that they have only a limited need of set theory, using it essentially only for problem complexity descriptions that characterize algorithms. Recently, however, the computing environment has changed fundamentally in two ways. First, techniques to compute with extremely large numbers, even infinite numbers, are revealing immense value in artificial intelligence, increasing the demand for further improvements in this area. Second, computational ability is passing the constraints of Moore’s Law by moving to other computing technologies like quantum computing. To adapt to these changes, we argue here that symbolic set theory gives us tools to expand our understanding and enable ideas of greater experience in computer science. Classical axiomatic set theory is based upon the Zermelo-Fraenkel axioms often together with the axiom of choice that can create unimaginably large sets populated by mostly undefinable elements, such as the mathematical “real line.” This is useless for computer scientists that need symbolic models for real phenomena. Symbolic sets are well-defined sets of symbolic elements constructed with suitably constrained axioms. The definite (pronounced define’- ate) real line is such a set that contains just the well-defined elements of the real line and is sufficient for numerical scientific computation. This paper takes a constructive point of view to make symbolic set theory less abstract and more accessible, and to illustrate its influence in computer science in recent years (how recent? Last century? Note that 19th century means the 1800s.). To use symbolic set theory, the computer scientist needs an acquaintance with discrete mathematics and with convergent sequences, and these concepts are discussed here.