Two isopanisad mantras in the light of mathematics and science

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Abstract
The present piece of work attempts at analyzing the Invocation Mantra and another Mantra (Mantra-5) of Isopanisad. They are discussed and analyzed in the light of modern day concepts of mathematics and science. It is shown that the ancient texts may be made to imply certain mathematical results and scientific findings.

Keywords: Isopanisad, mantra, infinity, energy

Introduction
Isopanisad, part of Shukla YajurVeda projects and highlights the Supreme Soul and the Absolute Truth through the 19 mantras (1 invocation mantra and 18 other mantras). Of these two specific mantras, namely the invocation mantra and the fifth mantra are of specific interest to us. In the light of mathematics and basic science these two mantras can be interpreted in a novel way that is hitherto unknown.

Methods
The layout of the paper is as follows:
We begin by invoking the two mantras with the traditional purport. Next we try to look into the mantras to explain mathematical and scientific facts. Finally we conclude with some general observations.

A: The Mantras
The invocation mantra states [1]

\[ \text{pūrṇam adāh pūrṇam idam, pūrṇāt pūrṇam udacyate} \]
\[ \text{pūrṇasya pūrṇam āḍāya, pūrṇam evāvaśisyate} \]

Meaning
The Almighty is perfect and complete. Consequently, all emanations from Him like this world are also complete. As He is complete, even after numerous complete emanations from Him He still remains complete.

The fifth mantra reads [1]

\[ \text{tad ejati tan najjati, tad diūre tad v antike} \]
\[ \text{tad antar asya sarvasya, tad u sarvasyāsyā bāhyataḥ} \]

Meaning
The Almighty walks and does not walk. He is not only far away, but He is very near also. He resides both inside and outside of everything that exists.
In the present paper we start with these traditional purports and try to see what mathematical/scientific facts can be extracted from them.

B: Novel Explanations
The two mantras under survey speak about the Absolute Almighty and a physical manifestation thereof. The invocation mantra speaks about a certain feature of the Almighty.
The other mantra we are interested in, speaks about the manifestation of the Almighty in terms of the all prevailing energy, manifested as being either static or dynamic. The energy transformation of the static to the dynamic or vice-versa is stated in the mantra. At this point, we try to see what lies underneath the two mantras in view of mathematics and basic science.

**The Invocation Mantra**

In mathematics, infinity is known as a number that is larger than any arbitrarily chosen however large number, written as $\infty$. Mathematical properties of infinity state that any quantity, finite or infinite, if subtracted from it leaves it at infinity. Mathematically

$$\infty - c = \infty$$

where $c$ is any arbitrary finite number and

$$\infty - \infty = \infty$$

Thus, finite or infinite subtraction (emanation) from infinity leaves it unaltered. This is exactly what has been stated in the invocation mantra. There we talk of the Almighty, the Supreme One, who remains complete after any number of complete emanations. Thus, the Supreme One who is complete can be directly mapped onto the mathematical infinity.

**Mantra 5**

In science, energy is known to be all prevailing, varying in form and expression. For instance, a body at rest has an energy stored in it i.e. it is capable of doing some work by virtue of its position. Like a stone held at certain height gains energy by virtue of its height (This type of energy is known as Potential Energy) Again a rushing car, a rolling ball or a flying aeroplane has a different type of energy by virtue of its state of motion, called Kinetic Energy. Thus normally energy (Mechanical energy) can be of two types Potential (energy at rest) and Kinetic (energy in motion). There remain other forms of energy, which we are not able to cover presently. Energy is everywhere, both nearby as well as far away as every system has energy within it. Needless to say energy resides inside every system large or small and therefore it has to reside both inside and outside any given system. Mapping the Supreme Lord onto Energy, this is exactly what the given Mantra explains.

**Conclusion**

The Isopanisad, conceived thousands of years ago, speaks of certain concepts and features that the present day mathematics and science talk about. It can be supposed that the intuitive knowledge of the saints (rishis) foresaw the absolute truth, the secrets of nature.

**Reference**