



# Mass Space Structure of centrally organized systems

Bishnu Charanarabinda Mohanty

## Abstract

Mass and space are the only two formless basic physical constituents of the cosmos. The universal formless interaction feature of mass and space is what causes the formation, stability, and dissociation of various mass-space forms (things possessing name, form, and form-based interaction qualities). The mass-space structure of formed components (atom, molecule, things on the surface of the planet, celestial bodies, etc.) in distinct domains give rise to different form-based properties even though the basic interactions of mass and space are the cause of all formed based interactions. By achieving mass proportional space holding, every mass-space integral system in a region maintains equilibrium with other mass-space systems in the neighbourhood. All mass-space systems act in equilibrium in a neutral manner. A substance is an active substance in the environment if it exhibits non-equilibrium space holding in relation to other substances in its surroundings. Depending on the type of non-equilibrium caused by its elements in various domains, the active matter has distinct state qualities (electrical, thermal, and energy, etc.). Mass-space interactions are the primary source of all known natural forces. Therefore, the fundamental mass-space interaction is sufficient to comprehend the mass-space structure of matter in many domains.

## Discussion

It has been indicated that space is a compressible fluid that is both physical and tangible. The basic components (mass and space) of the cosmos are believed to interact in three different ways. These interactions involve the forces of space-mass attraction, space-space repulsion, and mass-mass repulsion. The distribution of mass in space is extremely non-homogeneous throughout the cosmos. Even while homogeneity is visible at bigger sizes, it manifests as several sorts of non-homogeneity at ever-smaller domain scales. Although one may argue that the distribution of galaxies throughout the universe is homogenous, we are aware of non-homogeneity on smaller scales. The sun is a mass-rich mass-space system with less space holding per unit of mass whereas the space-matter-particles in interstellar space have more space holding per unit of mass. The interstellar space is filled with space-rich space matter particles. Due to mass-space interactions, the mass-rich sun emits highly mass-rich particles to interstellar space (solar radiation) and receives space-rich space-matter-particles from

interstellar space (background radiation). This exchange of mass rich and space rich particles forms the exchange radiation which tends to homogenize the mass and space of the universe.

Fig. 1 shows the attraction of the dense mass of nucleus to the surrounding space represented by force vectors directed towards the nucleus. The strength of mass-space attraction is directly proportional to the mass of the nucleus & the density of space and inversely proportional to the square of distance. Due to mass-space attraction the surrounding space is attracted towards the nucleus. The space does not collapse on to the surface of the nucleus due to space-space repulsion. The mass-space attraction and the space-space repulsion help to form the space structure around any nucleus.

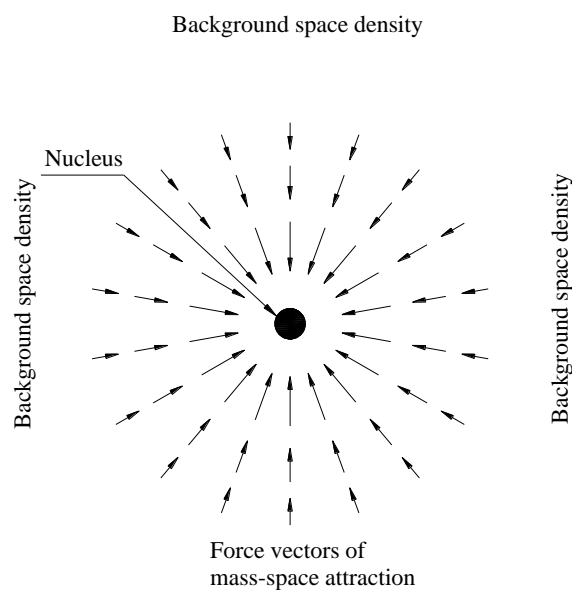
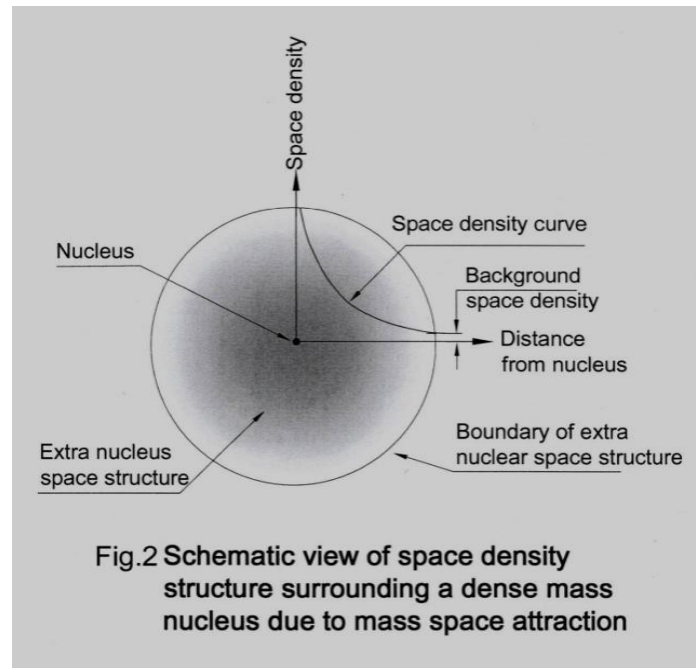


Fig. 1 **Attraction of mass of the nucleus to space contents in background**

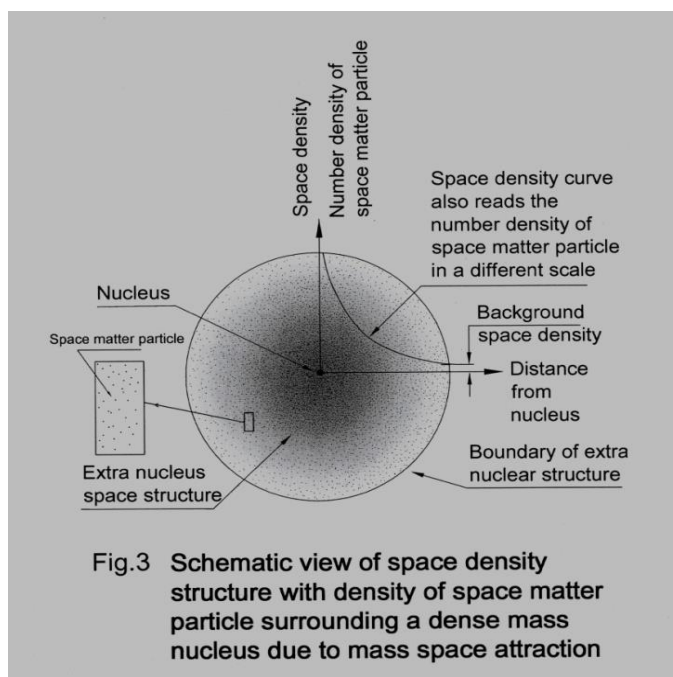
The space structure remains associated with the nucleus thereby forming an integral mass-space system. A space density graded extra-nuclear space structure is built up around every nucleus. The space density (space content per unit volume) is highest at the surface of the nucleus and goes on decreasing outwardly. The space density at the boundary of extra-nuclear structure approaches the background space density. The nature of space density variation is shown in Fig. 2. The nucleus and the extra-nuclear space structure form one integral system. If the nucleus moves then the

associated space structure also moves along with the nucleus. Again, if the nucleus rotates then the extra-nuclear space structure also rotates along with the rotation of the nucleus.



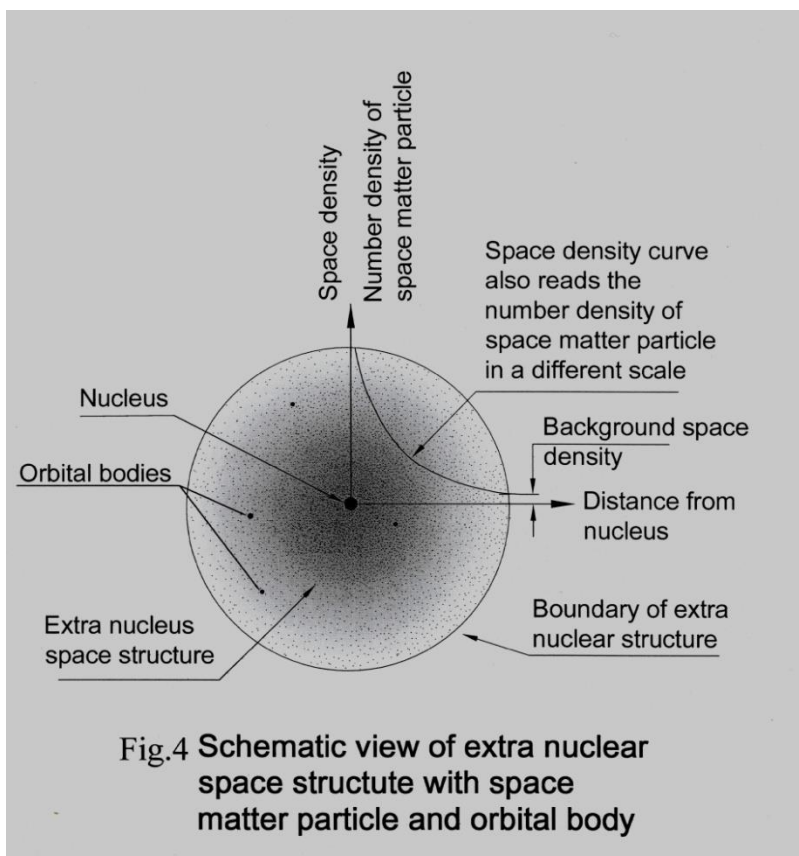
Further, due to mass-space attraction the space fluid attracts matter particles of finer domain and traps them in the space structure. These trapped matter particles in finer domain are termed as space matter particles. The space matter particles are integral part of space fluid. If space fluid flows then the space matter particles flow along with it. The space matter particles (atoms and molecules) in the atmospheric air of the earth experience the force of gravity of the earth but they do not accelerate towards the earth. In fact the space matter particles are not free in the space fluid to make independent motion as they form one integral system. Thus gravity causes vertical motion of air when the density of air changes but not the atoms and molecules. **As of today it remains unsolved as to why gravity acts on group of molecules but not to individual molecules. The new mass-space attraction provides appropriate answer to the above phenomenon and it is no more a wonder. This establishes the new phenomenon of mass-space attraction.**

The number density of space matter particles present in space fluid is directly proportional to the space density. The nature of distribution of space matter particles in the extra-nuclear space structure of any nucleus is shown in Fig. 3.



We know the atmospheric air contains atoms and molecules. This can be said in an alternate language that the extra-nuclear space structure of the earth contains atoms and molecules as space matter particles. Pressure within space fluid is caused by space-space repulsion and not due to the collision of molecules. Since the number density of space matter particles is directly proportional to the space density of the space fluid, one can mathematically evaluate pressure of a space fluid (gas) using kinetic theory of gas by making a hypothesis of random motion of molecules in gas. One may realize here as to how erroneous hypothesis, deviated away from reality of nature, is productive in expressing the laws of gas.

The extra-nuclear space structure also contains orbital bodies. The extra-nuclear structure comprising the space density structure containing space matter particles and orbital bodies as conceptualized in the new concept is shown in Fig. 4.



The shell features in the extra-nuclear space structure of the earth (in lower atmosphere, upper atmosphere and far atmosphere) is also a general feature for all centrally organized mass-space structure. It becomes obvious that such shell features are also present in the extra-nuclear space structure of atomic system for the uniformity of nature. We have an erroneous conceptual understanding of the extra-nuclear structure of atom by a mathematical model of atom comprising only the nucleus and the orbital electrons. Thus the electrons in mathematical model unknowingly account for the atomic phenomenon contributed by the space density structure and the structure of space matter particles in it. Hence the orbital locations and their functional features in the mathematical atomic model deviate away from reality. When the natural structure of atom is disturbed, the space matter particles (photons) are released from shell-subshell structure at discrete energy level. There is no need to assume the electrons to create or absorb photon. To understand the mechanism of formation of shell features in extra-nuclear space structure requires the new understanding of non-electric charge in light particles. Therefore the shell-subshell features will be discussed in subsequent articles.

## Conclusion

We understand gravity in two different ways, viz. gravity due to mass-mass attraction (Newtonian gravity) and gravity from space-time curvature (Einstein's gravity).



Einstein proposed that every dense mass is surrounded by curved space which implies the existence of an un-noticed mass-space interaction. Both types of gravity produce effects, but gravity's origin is a mystery. Both concepts of gravity are thought to have the same underlying source. Both Einstein's space time gravity and Newtonian mass attraction gravity are caused by the mass-space attraction. Now we may not have to wonder why all masses of the universe do not collapse on to a massive body due to mass attraction gravity. Again we may not have to wonder why gravity acts on group of molecules and not on individual molecules in atmospheric air. Additionally, the earth orbits at a speed of ~30 km per second. We would constantly be witnessing super cyclones on the surface of the planet if the extra-nuclear space structure (atmosphere) of the earth were not an integral part of it. There is no relative motion between the earth and the air that we can experience. This proves that the planet and its extra-nuclear space structure form one integral system. Thus celestial body carries its extra nuclear space structure during its rotation and revolution. This is feasible due to mass-space attraction. The mass-space interaction is universal and it is the cause of the fundamental forces of nature. There is scope of developing a universal mass-space theory to understand the state properties of matter (charge property, thermal property, dynamic property and the energy aspects of matter).

## Reference

1. <https://philosophyofnature.org.in/books>.