

# The Prospective Electromagnetic Multi-Hairy Structure of India for Nuclear Strong Force

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**Abstract:** In the recent book “Electromagnetic Unification of Four Forces”(ISBN978-3-659-76798-2), it was compiled the relevant progressions made by the world people in television while led notably by Zi-Jian Cai and the Members in satellite networks from China, India and USA. In this article, it is highlighted the new prospective electromagnetic multi-hairy structure for unifying the nuclear strong force. It was Cai and the European people in television who proposed the mass of particle as the spatially localized electromagnetic structure. It was the India satellite operator and Olympic athletes who proposed the electromagnetic multi-hairy structure for the photon and electrical particles. It was explained the strong interaction as forming the electromagnetic hybrid between charged quarks, which has been supported by different nuclear reactivity for  $\pi$  meson and  $\mu$  lepton requiring frequency matching, by increase in radii for atomic nuclei of elements, and by quark condensation as increase of electromagnetic mass frequency in flat hybrid. In reverse, it is the multiple hybrids of quarks in atomic nucleus that further supports the electromagnetic structures of multiple hairs. It is perspective to develop the mathematical description of electromagnetic multi-hairy structure in future.

**Keywords:** Electromagnetic localized mass structure; Electromagnetic multi-hairy structure; Electromagnetic hybrid; Strong force;  $\pi$ - $\mu$  nuclear reactivity.

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## I. INTRODUCTION

Recently, Zi-Jian Cai published the book “Electromagnetic Unification of Four Forces”(ISBN978-3-659-76798-2)[1] and several papers[2,3], compiling the progressions of the great electromagnetic unification of four forces in physics. Cai along with the Chinese Members, India Members, and US Members in the world satellite networks organized this movement and accomplished altogether with the anonymous people in worldwide television[1]. As the premise, the detectable form of energy was present as the frequency of electromagnetic wave or frequency of light in atomic physics, therefore all forces with energy should be unified with the electromagnetic force.

During such process of “Electromagnetic Unification of Four Forces”, there was achieved many very important physics progressions[1], such as the non-relativity of ideal time and space, electromagnetic mass structure, electromagnetic multi-hairy structure, electromagnetic orienting force, electrical pairing neutrino structure, and so on. There was explained and unified the strong force, weak force and gravitational force with the electromagnetic force, realizing the unification of four forces in physics[1]. The television and satellites were the new public media announcing and propagating these achievements, widely influencing the people of the whole world, and vividly manifesting the unprecedented originality of the achievements.

In this article, for the convenience of reading and citing, it is highlighted the new electromagnetic multi-hairy structure proposed by the India satellite operator and Olympic athletes, and discussed its prospective role for electromagnetic unification of nuclear strong force.

## II. ELECTROMAGNETIC MULTI-HAIRY STRUCTURE

The major breakthroughs in the electromagnetic unification of four forces were that, based the manifestations of other forces, the corresponding electromagnetic structures were formulated to reveal the electromagnetic mechanisms of the corresponding other forces. Among them, the spatially localized electromagnetic structure was first proposed for electromagnetic unification of gravitational force, while the electromagnetic multi-hairy structure for nuclear strong force.

Zi-Jian Cai and the European people in television proposed that the mass of particle should possess the spatially localized electromagnetic structure from the fact that the  $\gamma$  photon of high energy could transform in reciprocation with the gravitational mass[2,4]. The mass electrical field and magnetic field of particle moved continuously and transformed reciprocally, but spatially this electromagnetic mass structure did not resemble that of photon which propagated away. Instead it returned to the vicinity around its original point of departure through its electromagnetic movement and transformation[2,4]. The increase in mass during quark condensation[5,6] strongly supported the mass as spatially localized electromagnetic structure, with mass increment to be easily explained by electromagnetic conformational change[2,4]. After Zi-Jian Cai led the sate-commune group to make this proposition in early October 2005, the activities in discussion and exchange of physics elicited the attention, comment and participation of people in the whole world with television as the common media.

The Sate-Commune Group India Member and athletes in video record of 2000 Olympic Opening Ceremony both proposed the electromagnetic multi-hairy structure[2,7]. This structure and hybrid was beyond the consideration of present physics. In a photon when a changing electrical vector E generated a changing magnetic vector B, immediately from such new and changing magnetic vector B there generated the next changing electrical vector E. At this time, the original electrical vector E had changed a little. Such process repeated continuously until the earliest changing electrical vector E vanished. In this way, there would generate the electromagnetic multi-hairy structure for the photon[2,7].

In similarity, there would also generate the multi-hairy electrical fields for charged particles[2,8]. A charged particle possessed the spatially localized electromagnetic structure[2,4] and carried the external centric radial electrical field. When a changing electrical line of electrical field E with the centric radial shape generated a changing magnetic field B, immediately from such new and changing magnetic field B there generated the next changing and centric radial electrical line of electrical field E. At this time, the original electrical line of electrical field E had changed a little. Such process repeated continuously until the earliest centric radial electrical line of electrical field E vanished. These continuously generated new and centric radial electrical lines of electrical field E would accumulate around the charged particle such as positron or electron, forming the electromagnetic multi-hairs and the external centric radial electrical field of the respective charged particle[2,8]. Therefore, the electromagnetic multi-hairy structure helped reveal the more detailed electromagnetic structure of particles of charge[2,8].

## III. ELECTROMAGNETIC UNIFICATION OF STRONG FORCE

The electromagnetic multi-hairy structure was proposed for electromagnetic unifying the nuclear strong force. It was suggested that there formed the stable electromagnetic multi-hairy flat hybrid between the adjacent positive and negative quarks, while it was further divided the released energy brought about by the electromagnetic hybrid into two parts[2,3,9]. One was the released energy of the electromagnetic multi-hairy flat hybrid itself. Another was the thermodynamic moving, vibrating and rotating energy of quark particles and their internal electromagnetic structures, which was released by the orderliness and stability of electromagnetic multi-hairy hybrid[2,3,9]. Both of the two energies were parts of the energy of strong interaction.

This electromagnetic explanation of nuclear strong force is compatible with many lines of evidences. First, the nuclear reactivity for  $\pi$  meson and  $\mu$  lepton is different[10,11], which supports the strong interaction as generated from the electromagnetic multi-hairy hybrid requiring matching on frequency[2,3,9]. Second, due to the gross trend the radii for atomic nuclei of elements increasing approximately in proportion to increase in their contained quarks, the strong interaction would result from the electromagnetic multi-hairy hybrid of quarks rather than mergence of electromagnetic entities of quarks which should increase the curvature and decrease the radius[9]. Third, quark condensation as increase in mass by strong force could be explained by the electromagnetic conformational change on hybrid region[2,3], which is flat rather than round[12,13].

The electromagnetic multi-hairy structure[2,7,8] allows the quark to form the concurrent hybrid with more than one quark. Because no quark is isolated as single uncombined in atomic nucleus, it is obvious that nuclear fussion would

result in a quark to hybrid with one non-isolated quark in the other atomic nucleus, which makes the non-isolated quark form multiple hybrids. In this regard, the quarks electromagnetic of multi-hairy structures[2,7,8] constitute the atomic nucleus with multiple hybrids. In reverse, it is just the multiple hybrids of quarks in atomic nucleus that further supports the electromagnetic structures of multiple hairs.

#### IV. DISCUSSIONS

Zi-Jian Cai and European people in television early proposed the gravitational mass of particle as the spatially localized electromagnetic structure. In this article, it is highlighted the new prospective electromagnetic multi-hairy structure for electromagnetic unification of nuclear strong force, which was proposed by both the Sate-Commune Group India Member and athletes in video record of 2000 Olympic Opening Ceremony[2,7]. The electromagnetic multi-hairy structure is able to form hybrid[2,7,8,9], present in photon[2,7] and charged particles[2,8].

The strong force was suggested to result from the stable electromagnetic multi-hairy flat hybrid between the adjacent positive and negative quarks[2,3,9], with the released energy divided into two parts, one as the energy of multi-hairy flat hybrid itself, another as the thermodynamic moving, vibrating and rotating energy of quark particles and their internal electromagnetic structures[2,3,9].

This electromagnetic unification of nuclear strong force has been supported by the different nuclear reactivity for  $\pi$  meson and  $\mu$  lepton requiring frequency matching[10,11], by the increase in radii for atomic nuclei of elements[9], and by quark condensation as increase of electromagnetic mass frequency in flat hybrid[12,13].

Because the electromagnetic multi-hairy structure[2,7,8] allows the quark to form concurrent hybrid with more than one quark, the multiple hybrids of quarks in atomic nucleus reversely support the electromagnetic structures of multiple hairs.

#### V. LIMITATION OF THE STUDY

The limitation of the study lies in that it relies heavily on the belief that the nuclear strong can be unified with the electromagnetic force. Besides, mathematical description of the electromagnetic multi-hairy structure and hybrid need to be developed to provide more quantitative analysis of the electromagnetic unification of the strong force.

#### VI. CONCLUSIONS

Zi-Jian Cai and European people in television proposed the gravitational mass of particle as the spatially localized electromagnetic structure. The India satellite operator and athletes in video record of 2000 Olympic Opening Ceremony proposed the electromagnetic multi-hairy structure of photon and charged particles. The strong interaction was explained as forming the tight flat electromagnetic hybrid between the adjacent quarks, which has been supported by different nuclear reactivity for  $\pi$  meson and  $\mu$  lepton, increase in radii for atomic nuclei of elements, and quark condensation in flat hybrid. In reverse, the multiple hybrids of quarks in atomic nucleus support the electromagnetic structures of multiple hairs. Because of its success, it is necessary to further develop the mathematical description of electromagnetic multi-hairy structure.

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#### CONFLICT OF INTEREST STATEMENT

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#### REFERENCES

- [1] Cai Z-J, Electromagnetic Unification of Four Forces. Saarbrücken, Germany: Lambert Academic Publishing, 2015.
- [2] Cai Z-J (2016) Review of milestone book: Electromagnetic unification of four forces. Res Rev J Pure Applied Phys 4(2): 20-27.
- [3] Cai Z-J (2018) The electromagnetic unification of four forces and electromagnetic structures of particles. OALib J 5(4): e 4514.

- [4] Cai Z-J (2020) The electromagnetic unification of gravitational force by Chinese. OALib J. 7(3): e 6175.
- [5] Crewther RJ. (1986) Testing the mode of quark condensation. Phys Lett B 176(1):172-178.
- [6] Dai YB, Ding YB, Huang CS, Wang CL (1992) Top quark mass in top quark condensation model. Phys Lett B 285(3): 245-250.
- [7] India Member SCG, Cai Z-J, Sports-People 2000 OOC, Sports-People 2004 OOC, Zhejiang Members SCG, Beijing Member SCG, Chinese People TV. The electromagnetic multi-hairy structure and the photon. In: Z-J Cai(Ed), Electromagnetic Unification of Four Forces. Saarbrücken, Germany: Lambert Academic Publishing, 2015; pp43-48.
- [8] India Member SCG, Cai Z-J, Sports-People 2004 OOC, Shanghai People TV, European People TV, Southern American People TV. The electromagnetic multi-hairy structure and the particle of charge. In: Z-J Cai(Ed), Electromagnetic Unification of Four Forces. Saarbrücken, Germany: Lambert Academic Publishing, 2015; pp49-53.
- [9] UN Staffs TV, India Members SCG, US Members SCG, US Congress Senator TV, Cai Z-J, Zhejiang Members SCG, Korean People TV, European People TV. Explaining the strong interaction with the electromagnetic multi-hairy hybrid. In: Z-J Cai(Ed), Electromagnetic Unification of Four Forces. Saarbrücken, Germany: Lambert Academic Publishing, 2015; pp59-66.
- [10] Chiang HC (1982) Some developments in the study of pion-nucleus interactions. Prog Phys 2 (2): 228-242.
- [11] Wang LM, Wang HY, Liu ZY, Yang HW, Pang HC (2011) Muon tomography algorithms for fissile nuclear materials detection. Nuclear Electronics & Detection Technology 31(8): 874-877.
- [12] Taiwan Member SCG, Beijing Members SCG, European People TV, Shenzhen People TV, Guangdong Member SCG, Zhejiang Members SCG, Cai Z-J, India Member SCG, Chinese People TV, Nanjing People TV. Explaining the weak interaction with the electromagnetic interaction. In: Z-J Cai(Ed), Electromagnetic Unification of Four Forces. Saarbrücken, Germany: Lambert Academic Publishing, 2015; pp76-83.
- [13] Beijing People TV, US People TV, Cai Z-J, European People TV, Shanghai People TV, Zhejiang Members SCG, Beijing Member SCG, India Member SCG, Artists/Audience SSP 2009. Two possibilities for the relationship between the quark and  $\pi$  meson. In: Z-J Cai(Ed), Electromagnetic Unification of Four Forces. Saarbrücken, Germany: Lambert Academic Publishing, 2015; pp84-92.