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Challenge to the black hole model of quasars and active galactic nuclei

On our galactic center an unusually strong radial magnetic field has been found near our Galactical Center. It is an important implication that the observed radiation from the GC cannot be emitted by the gas of the accretion disk due to accretion plasma fluid being hard to transfer across the magnetic field line by the Lorentz force. This is the first dilemma of the standard accretion disk model of black hole at the GC. The second dilemma is that the magnetic field with a lower limit of 8 mg near the GC is hardly produced by α-turbulence dynamo mechanism. Then author would like to talk about the strong radial magnetic field detected in the vicinity of the GC is consistent with the prediction from our model of supermassive object with magnetic monopoles. This is a strong evidence of both no black hole at the GC and existence of magnetic monopoles. Taking the RC effect (nucleons may decay catalyzed by MM) as an energy source, besides, we have proposed a unified model for various supernova explosion. In our model, the remnant of the collapsed core of supernova is still a neutron star rather than a black hole no matter how huge of the supernova mass. That means black holes with stellar mass are impossible to be formed through supernova explosion. Query on the black hole models for other quasars and active galactic nuclei: The key dilemma of the black hole model is the question on the BH mass at the centre of AGNs. The radiation from the BHs is due to accreting the material of accretion disk around the BHs. According to the Mach principle, the mass distribution of the universe (different redshifts) of the black holes formed in the early universe (with the number of black holes formed) was roughly the same. Through the accretion process, the mass of black holes could only increase continuously. If we assume that all quasars were born at the same primordial era, then the detected (observed) accreted mass of the BH through accretion disk (by the current theories of the accretion disk) should be took off. Then the mass of BHs in the lower redshift region would be very small or negative. However, the dilemma will disappear in our model of super-massive stars with magnetic monopoles.

Recent Publications

1. Eatough R P, et al., (2013) A strong magnetic field around the supermassive black hole at the centre of the galaxy. Nature 591:391-393.
2. Peng et al., (2016) A possible influence on standard model of quasars and active galactic nuclei in strong magnetic field. Astrophys Space Sci. 361:388.
3. Peng et al., (2017) Some new possible anticipated signals for existence of magnetic monopoles? New Astronomy 57:59-62.
4. Peng et al., (2017) A unified model of supernova driven by magnetic monopoles. Astrophys Space Sci. 362:22.

Biography

Qiuhe Peng is mainly engaged in nuclear astrophysics, particle astrophysics and Galactic Astronomy research. In the field of Nuclear Astrophysics, his research project involved a neutron star (pulsar), the supernova explosion mechanism and the thermonuclear reaction inside the star, the synthesis of heavy elements and interstellar radioactive element such as the origin of celestial 26Al. In addition, through his lectures, he establishes Nuclear Astrophysics research in China, He was invited by Peking University, by Tsinghua University (both in Beijing and in Taiwan) and by nuclear physics institutes in Beijing, Shanghai, Lanzhou to give lectures on Nuclear Astrophysics for many times.

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