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## An unified model of supernova driven by magnetic monopoles

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Magnetic monopoles may catalyze nucleon decay (RC effect) according to the particle physics. Using the RC effect, we proposed a model of a super-massive star with magnetic monopoles at the Galactic Center (instead of the black hole model) 30 years ago and three predictions in our papers of ApJL in 2001 have been quantitatively confirmed recent years: 1) a strong radial magnetic field near the GC is confirmed by the observation in 2013; 2) The emitting rate of the positrons from the GC is consistence with the observation in 2003; and 3) The spectrum peak of the thermal radiation is at 1013 Hz in the sub-mm wavelength regime is consistence with the observation in 2013. These are the astronomical observational evidences of magnetic monopoles. Besides, we have estimated the number of magnetic monopoles interior of stars and planets, which were captured from the space since the star formation. Based on the estimation and taking the RC effect as the energy source, we propose an unified model of supernova driven by magnetic monopoles, which may simply explain the core collapsed supernova: SNII, SNIb, SNIc and SLSN and the dark explosion of SN very well.

### 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  $^{26}\text{Al}$ . 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. He has participated in the international academic conferences over 40 times and he visited more than 20 countries. In 1994, he visited eight institutes in USA to give lectures. He is the first Chinese Astrophysicist to visit NASA and to give a lecture on the topic, "Nuclear Synthesis of Interstellar  $^{26}\text{Al}$ ". In 2005, he visited USA twice and gave lectures in eight universities again. Inviting six astronomers of USA to give series lectures, he has hosted four consecutive terms summer school on gravitational wave astronomy. After the four summer school obvious effect, at least 20 young scholars in China in the field of gravitational wave astronomy specialized learning and research. 220 research papers by him have been published.

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