Ultra-high Sensitivity Extremely-weak Magnetic Field Science and Technology Infrastructure and Its Applications

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Abstract

Using ultra-sensitive and extremely-weak magnetic field and inertial measurement technology, we will build a large scientific facility for extremely-weak magnetic fields, creating the highest performance and largest "zero magnetic" space to provide extreme weak magnetic environments and extreme measurement methods. Once completed, it will maintain China's leading advantage in ultra-sensitive and extremely-weak magnetic field and inertial measurement technology, while simultaneously fostering the development of large scientific facilities for Earth's magnetic field. Facing the world's scientific frontiers, national major needs, economic main battlefield, and people's health, the team will rely on this large-scale scientific facility to carry out technology achievement transformation and its applications.

Jiancheng Fang, an academician of the Chinese Academy of Sciences, is a professor and director of the Academic Committee at Beihang University. He also serves as the chief designer and scientist for the Hangzhou Extremely-Weak Magnetic Field National Major Science and Technology Infrastructure.

He has long engaged in research on inertial positioning and navigation, quantum precision measurement and sensing, and Extremely-weak magnetic field measurement and its medical applications. He has led projects that have won one first-class and one second-class National Technological Invention Awards, one second-class National Science and Technology Progress Award, and three second-class National Teaching Achievement Awards. Fang has been honored with the first National Defense Science and Technology Industry Outstanding Talent Award, the National Outstanding Professional Technical Talent title, and the Ho Leung Ho Lee Foundation Science and Technology Achievement Award.