

THE DETERMINATION OF THE EARTH MAGNETIC FIELD BY NUCLEAR INDUCTION

(การวัดค่าของสนามแม่เหล็กโลกโดยการเหนี่ยวนำนิวเคลียร์)

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ABSTRACT

The absolute value of the earth's magnetic field in the field in front of the Auditorium of Chulalongkorn University, Bangkok, has been determined with precision by means of nuclear magnetometer. The technique consists of the accurate measurement of the precession frequency about the earth field of hydrogen nuclei in a sample of distilled water. A typical value of the earth field at 6.02 p.m. on February 18, 1970, was found to be 0.41963 ± 0.00004 gauss. Variation of a few gammas (10^{-5} gauss) was observed during a period of one hour, and there is also a large variation from day to day.

บทคัดย่อ

ค่าสัมบูรณ์ของสนามแม่เหล็กโลกที่สนามคานหนาหอประชุมของจุฬาลงกรณ์มหาวิทยาลัย ได้วัดไว้แล้วอย่างละเอียด โดยไอน์ว็อล์ฟกังแมกนีโตมิเตอร์ วิธีการประกอบด้วยการวัด ความถี่อย่างละเอียดของดาวดวงรอบ ๆ สนามแม่เหล็กโลกของนิวเคลียสของไฮโดรเจน ในน้ำกลั่น วัดค่าสนามแม่เหล็กโลกเมื่อวันที่ 18 กุมภาพันธ์ 2513 เวลา 18.02 น ได้ 0.41963 ± 0.00004 เกาส์ ในช่วงเวลา 1 ชั่วโมงปรากฏว่า สนามแม่เหล็กโลก มีการเปลี่ยนแปลงขนาด 2-3 แกรมมา และแต่ละวันมีการเปลี่ยนแปลงจางกันมาก

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