

The Measured Stray Field of the JACEE Solenoid

The CDC+X group
(Summarized by Y. Katoh)

The measurement was carried out in the occasion of the JACEE test excitation on 18 April, 2004.

The JAECC magnet was in the old power supply room (hut) in front of the PS East Counter Hall.

The solenoid current was 430A , or approximately 1T at the center of the solenoid.

The solenoid was in the permanent current mode.

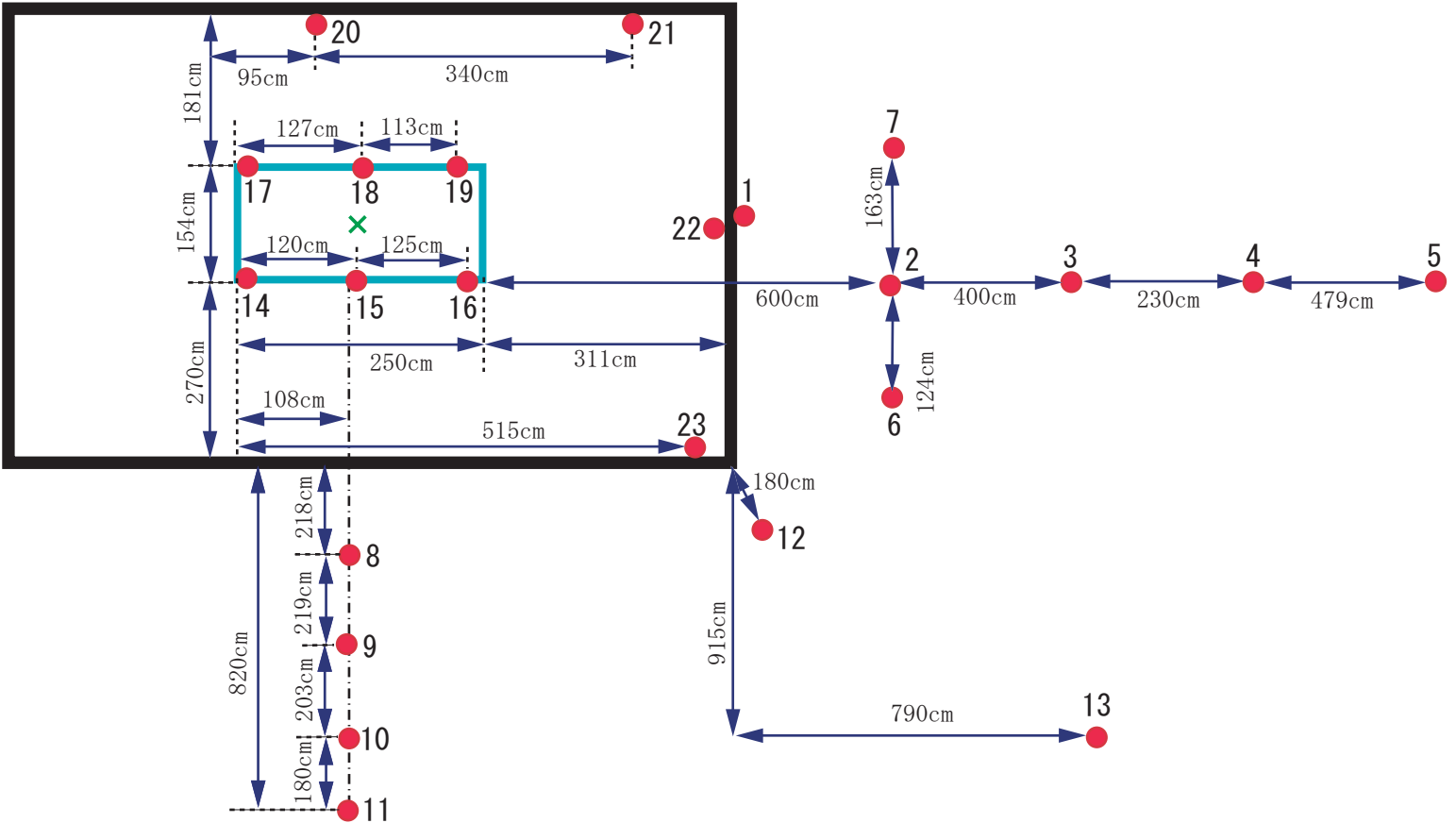
The stray fields were measured by two gauss meters; one for the measurements outside the hut and another inside the hut.

The gauss meters are not accurate to measure the stray fields below 0.5 gauss typically.

Figures :

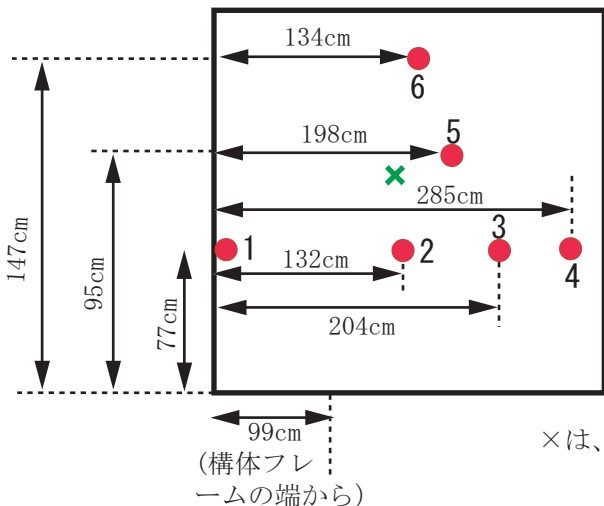
- Page 2: Measured stray fields at different locations. The green box is the aluminum cage contains the JACEE. The black box is the hut, which is actually longer than the drawing to the left. In the right side of the hut there is a large (iron) shutter.
- Page 3: Measured stray fields (mT) versus the distance (cm) from the center of the JACEE solenoid. The dipole feature of the solenoid is neglected in this plot.
- Page 4: Stray fields measured in the central section of the JACEE (No. 8-11 in the figure in the page 2). The horizontal axis is the distance from the center of the JACEE (perpendicular to the solenoid axis).

プレハブ平面図



- | | |
|------------------------------|-----------------------------------|
| (1) 19.2G (構体中心からの距離 436 cm) | (2) 3.4G (729 cm) |
| (3) 1.0G (1128 cm) | (4) 0.5G (1357 cm) |
| (5) 0.3G (1836 cm) | (6) 3.1G (730 cm) |
| (7) 3.4G (752 cm) | (8) 5.2G (565 cm) |
| (9) 2.3G (784 cm) | (10) 1.5G (987 cm) |
| (11) 0.9G (1167 cm) | (12) 3.8G (737 cm) |
| (13) 0.5G (1770 cm) | (14) 500G (147 cm) |
| (15) 800G (77 cm) | (16) 250G (143 cm) |
| (17) 1100G (147 cm) | (18) 930G (77 cm) |
| (19) 500G (138 cm) | (20) 50G (260 cm) |
| (21) 20G (403 cm) | (22) 21G (436 cm シャッターを挟んで(1)と同じ) |

シャッター外側面

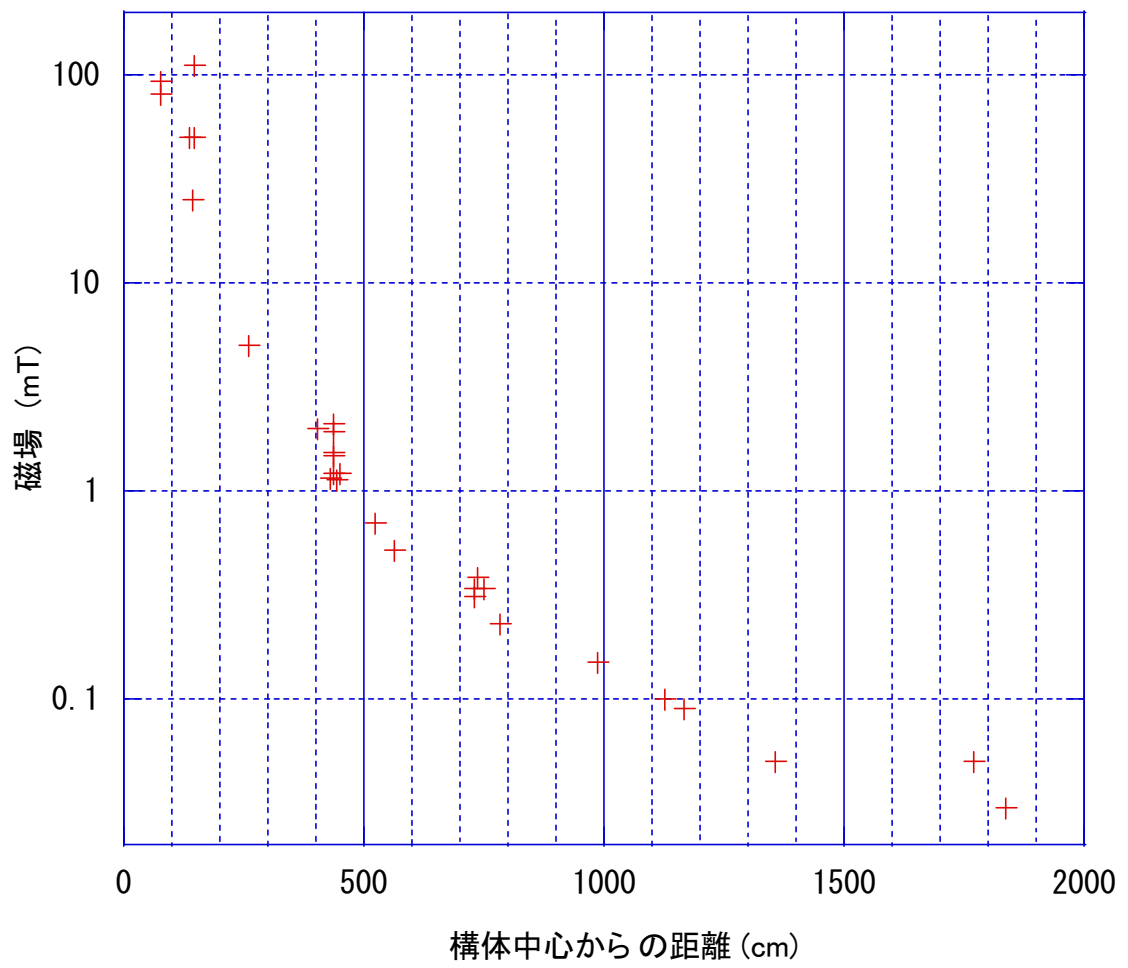


- | |
|----------------------------------|
| (1) 11.5G (3次元の構体中心からの距離 470 cm) |
| (2) 12.2G (438 cm) |
| (3) 14.7G (437 cm) |
| (4) 12.2G (450 cm) |
| (5) 15.4G (437 cm) |
| (6) 11.3G (442 cm) |

×は、構体の3次元中心

(構体フレームの端から)

距離と洩れ磁場の関係



磁場と垂直方向の洩れ磁場と距離の関係

