

Magnetically shielded laboratory

RNDr. Ivan Škorvánek, CSc., Institute of Experimental Physics SAS, skorvi@saske.sk

The magnetically shielded room with high shielding factors against DC and AC external fields enabling accomplishment of magnetic and electromagnetic measurements, which require suppression of the parasitic external magnetic fields as well as the Earth's magnetic field.

Inside dimensions: 2.5 m x 2.5 m x 2.3 m

Shielding factor S

(ratio of external and internal magnetic field):

$S \sim 1000$ for static field, DC

$S \sim 100$ for frequency 0.1 Hz

$S \sim 1000$ for frequency 1 Hz

$S \sim 10000$ for frequency 10 Hz

$S \sim 50000$ for frequency 100 Hz



Applications:

- Performing of magnetic and electromagnetic experiments in ultra-low magnetic fields
- Measurements of hysteresis loops for soft magnetic materials with ultra-low coercivity, $H_c \leq 1$ A/m, using flux-gate sensors
- Testing and calibration of sensitive magnetic sensors

