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# Preliminary design considerations for Helmholtz coils at the PITZ RF photogun

Description: The student will investigate the space constraints around the PITZ RF gun to develop Helmholtz air coils to compensate for the vertical and horizontal components of the earth's magnetic field (residual magnetic field in the tunnel). Two pairs of coils around the cavity of the gun should be able to generate a static homogeneous magnetic field of ~50 uT along the cavity axis. Simulations of the static magnetic field should also consider the number of wire windings in conjunction with the available power supply capability, and an estimate of the wire heating has to be done. Optionally, residual magnetic field measurements with a Hall probe could be done.

#### Group

PITZ

#### **Project Category**

B3. Research on accelerators

## **Special Qualifications**

### **DESY Site**

Zeuthen

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