RESEDA
Resonance Spin Echo for diverse Applications

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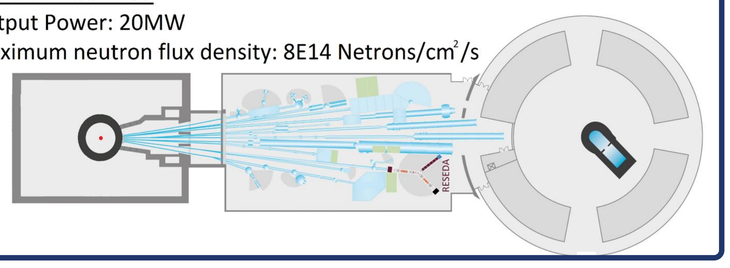
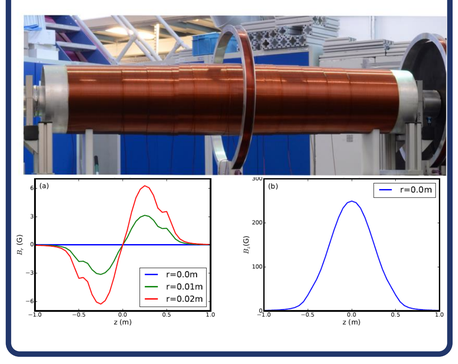
Instrument Description:

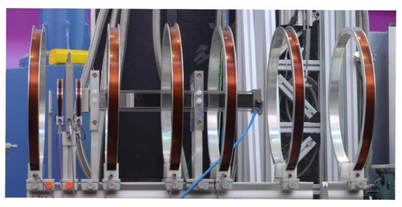
Neutron Source:
Output Power: 20MW
Maximum neutron flux density: 8E14 Netrons/cm²/s



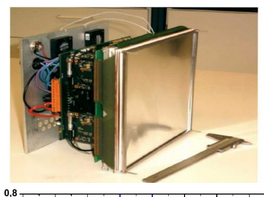
Field Subtraction Coils:
Total wire length: 1334 m
Serial resistance: 14.6 Ohm
Field integral at 2.2 A: 74.32 Gm

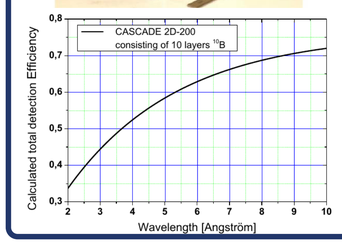


Guide Fields with Neutron Guide:
Guide field strength: several Gauss
Neutron guide coating: m=1.2

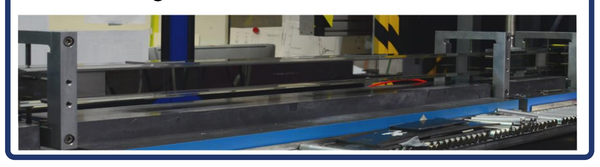


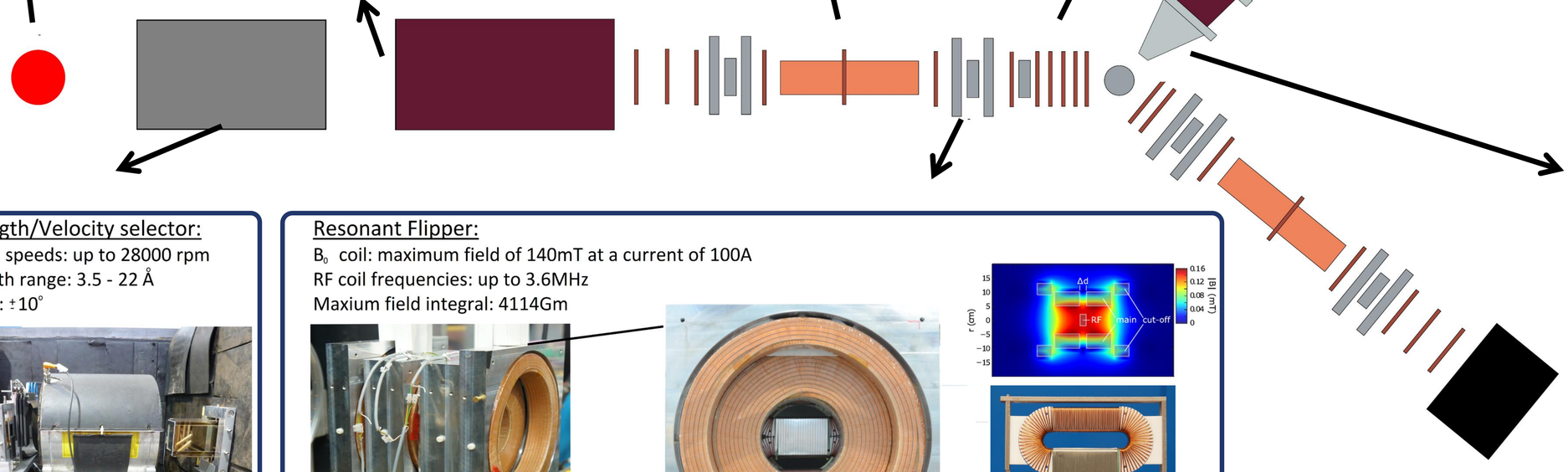
CASCADE Detector:
Up to 8 ^{10}B covered foils
Spatial resolution: 1.56mm
Time resolution: 100ns





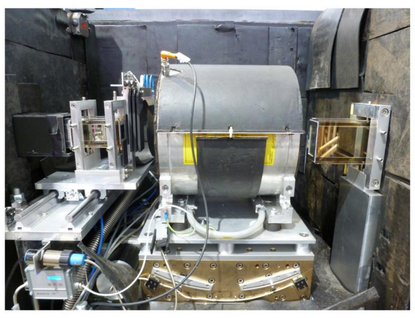
V - Cavity Polarizer:
Double V - Cavity length: 2m
Mirror coating: m = 5



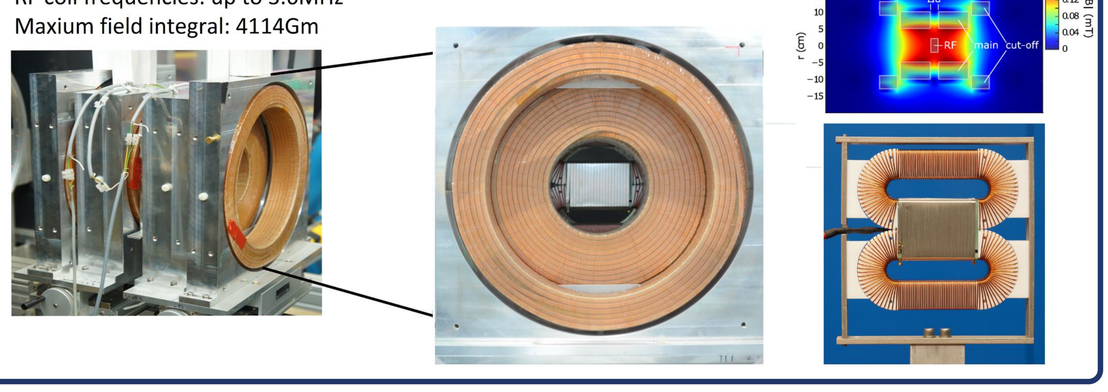


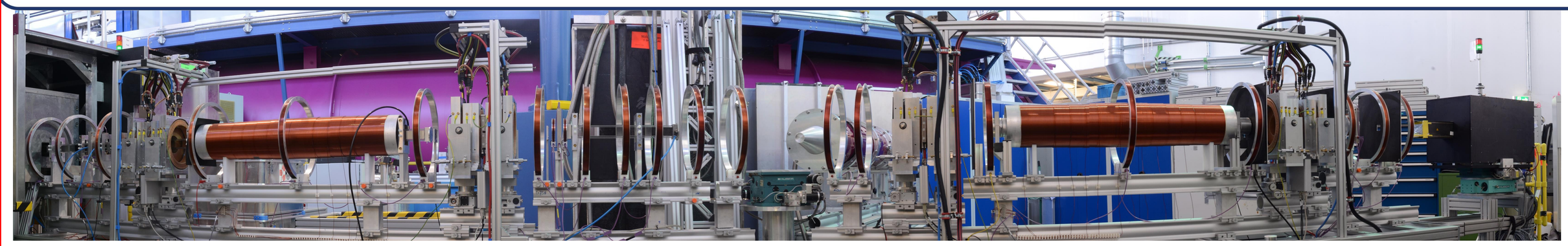
Sample Environment with Magnet and Dilution Insert

Wavelength/Velocity selector:
Rotational speeds: up to 28000 rpm
Wavelength range: 3.5 - 22 Å
Tilt angles: ±10°

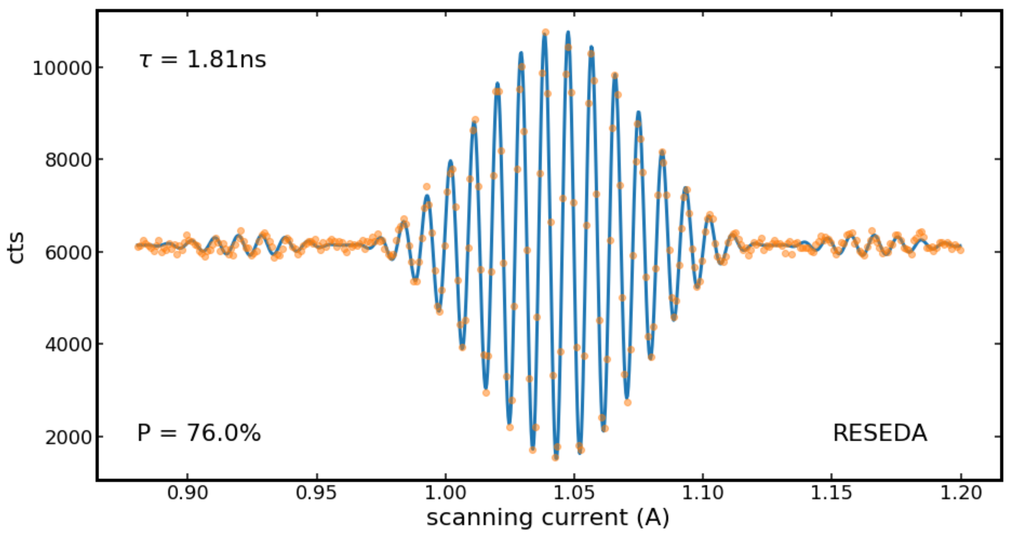


Resonant Flipper:
B_0 coil: maximum field of 140mT at a current of 100A
RF coil frequencies: up to 3.6MHz
Maxium field integral: 4114Gm



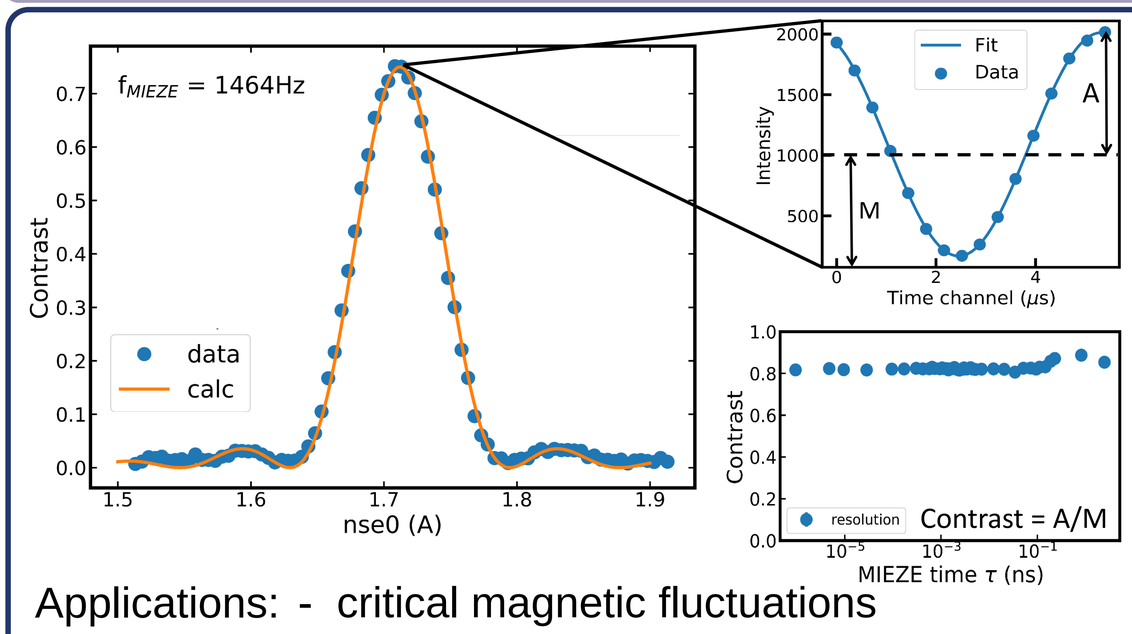


NRSE - Neutron Resonant Spin Echo



Applications:
- dynamics and diffusion of polymer melts
- dynamics of water in porous media
- diffusion processes in ionic liquids
- dynamics of soft biological systems

MIEZE – Modulation of IntEnsity with Zero Effort



Applications:
- critical magnetic fluctuations
- melting of superconducting vortex lattices
- dynamics at quantum phase transitions
- emergent excitations in quantum magnets.

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