‘The strong interaction at the frontier of knowledge: fundamental research and applications’

WP3 TA1: Transnational Access to COSY

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STRONG-2020 Kick-off meeting

October 23-25, 2019

TA1: Transnational Access to COSY

- Transnational Access provision -
  Unit of access: Beam hour; Unit cost(EUR): 90;

Deliverables	D3.1	D3.2	D3.3
period	first 18 months	second 18 months	whole project
Min. quantity of access to be provided	600	600	1600
Estimated number of users	42	42	112
Estimated number of user days	252	252	672
Estimated number of projects	12	12	32

COSY operation: >= 2024

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824093.

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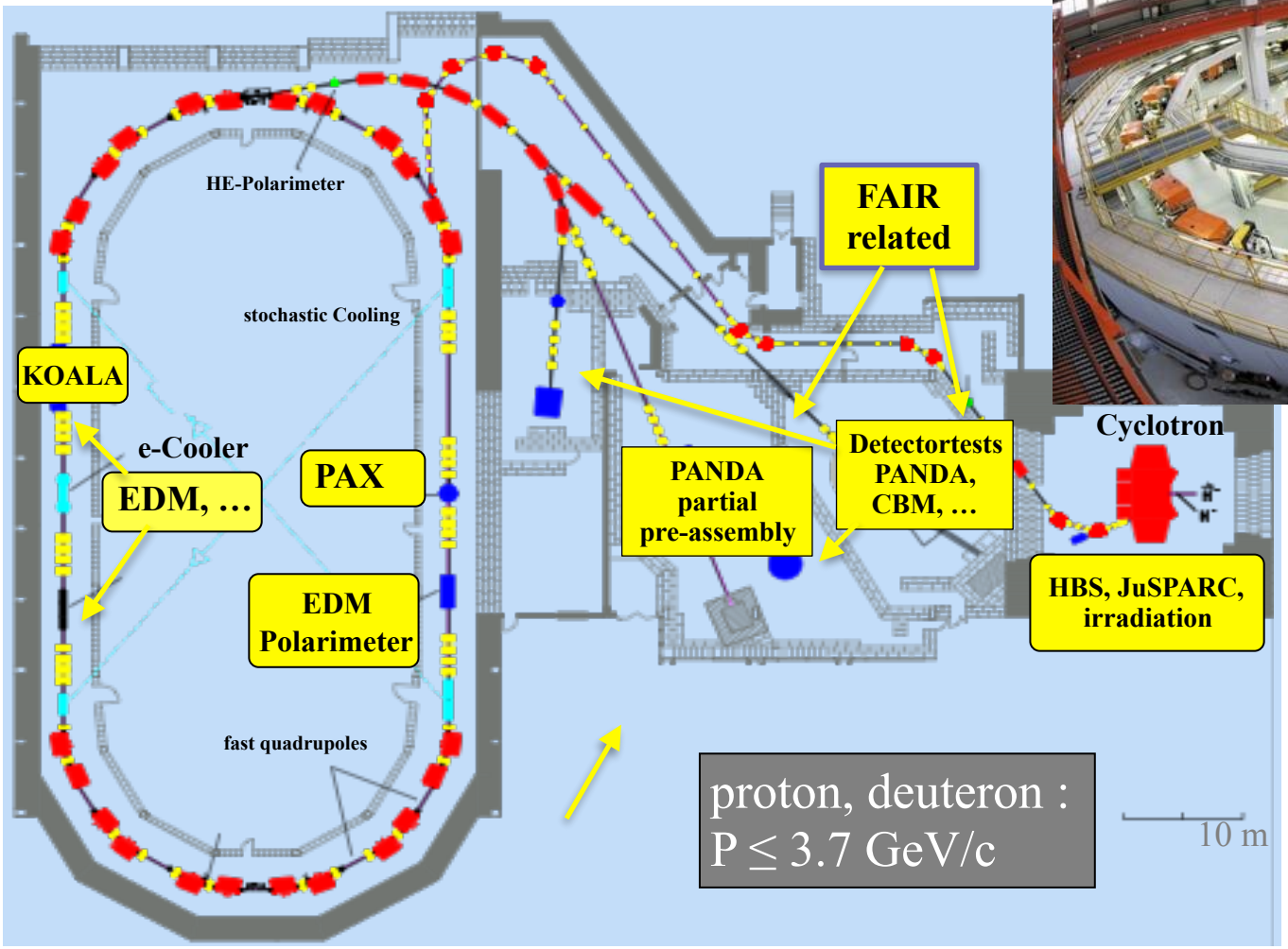

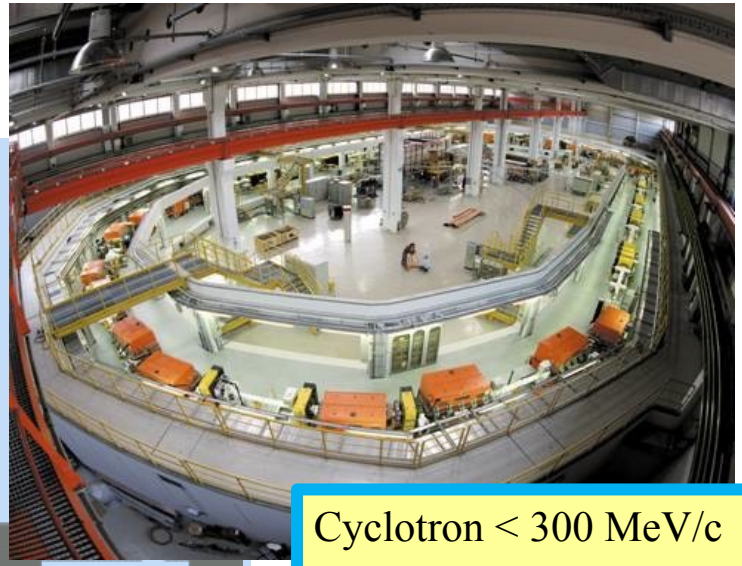

Cyclotron < 300 MeV/c

Cooler-Synchrotron
COSY < 3.7 GeV/c

$5 \cdot 10^{10}$ stored p,d
unpolarized, polarized

phase space cooling

internal, external
target stations

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COSY beam time schedule 2019, 2nd half

Week	27	28	29	30	31	32	33	34	35	36	37	38	39
	July					August						September	
	01/07/19	08/07/19	15/07/19	22/07/19	29/07/19	05/08/19	12/08/19	19/08/19	26/08/19	02/09/19	09/09/19	16/09/19	23/09/19
Monday	CBAC-10	Maintenance	Maintenance	Maintenance	Maintenance	MD	stochastic cooling (A001.8)	FAIR PANDA Cluster target (D009.3)	PANDA Koala (D005.2)	MD	Lumi-Det. (D011)	HBS	Beam based alignment (A015.1)
Tuesday	Maintenance									RWTH Students education			
Wednesday													
Thursday													
Friday													
Saturday													
Sunday													
	Reparatur Dipolnetzgerät					unpol. protons							unpol deuterons
						COSY internal beam				JESSICA		Cyc. - Big	

Week	40	41	42	43	44	45	46	47	48	49	50	51	52
	October					November						December	
	30/09/19	07/10/19	14/10/19	21/10/19	28/10/19	04/11/19	11/11/19	18/11/19	25/11/19	02/12/19	09/12/19	16/12/19	23/12/19
Monday	Beam based alignment	Beam based alignment (A015.1)	MD	JEDI Polar. (E002.7)	MD	CBM (D004.7)	MD	stochastic cooling (A001.9)	electron cooling (A002.6)	PANDA Koala (D005.3)	Maintenance / Radiation hardness (D012)	Maintenance	Maintenance
Tuesday	Feiertag				Feiertag								
Wednesday	(A015.1)												
Thursday													
Friday													
Saturday													
Sunday													
	unpol.deuterons		pol. deuterons		unpolarized protons								
	COSY internal beam				JESSICA			COSY internal beam			Cyc. BIG Karl		

COSY beam time schedule 2020, 1st half

Week	1	2	3	4	5	6	7	8	9	10	11	12	13
	January 2020				February				March				
	30/12/19	06/01/20	13/01/20	20/01/20	27/01/20	03/02/20	10/02/20	17/02/20	24/02/20	02/03/20	09/03/20	16/03/20	23/03/20
Monday	Maintenance	Maintenance	Maintenance / HBS (A106)	MD	JEDI Wien Filter (E05.6)	CBAC-11	MD	Lumi-Det. (D011.1)	Karneval	MD	Siberian Snake (A009)		Maintenance
Tuesday						JEDI Polar. (E002.7)			JUSPARC (A016)				
Wednesday													
Thursday													
Friday													
Saturday													
Sunday													

Beam time in 2018:

4536 operation hours

TA offer:
400 hours/year
(≈ 9%)

FAIR related : PANDA Cluster target tests
KOALA (elastic pp-scattering)
Luminosity detector test
CBM detector tests

Machine studies: stochastic cooling, electron cooling
Sibirian snake

Cyclotron beam: HBS (High brilliance neutron source)
JuSPARC (Jülich Short-Pulsed Particle and Radiation Center)
Radiation hardness (SiPM)

JEDI (Jülich Electric Dipole moment Investigations) related:

request for EU support

Beam based alignment
JEDI Polarimeter test
Wien Filter (EDM)

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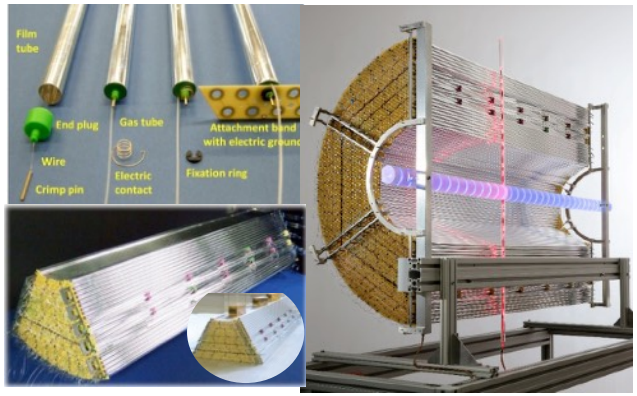
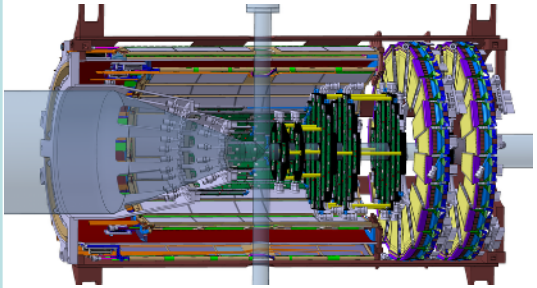
Detector tests

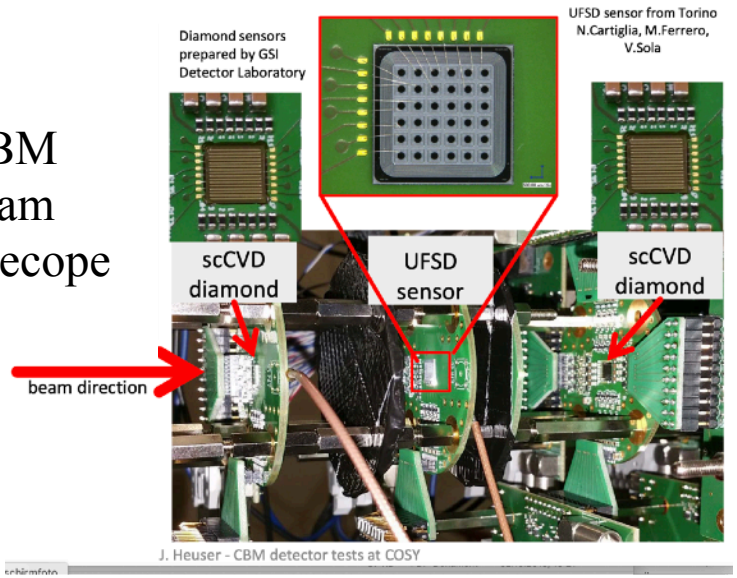
Straw-tubes for PANDA





PANDA
Si-μstrip,
Si-pixel

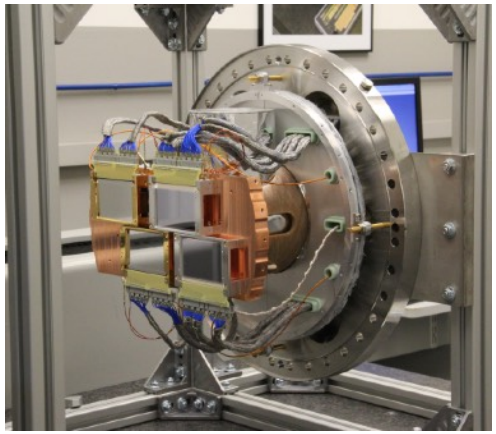
CBM
beam
telecope



KOALA

elastic pp

Si- , Ge-
stripdetector



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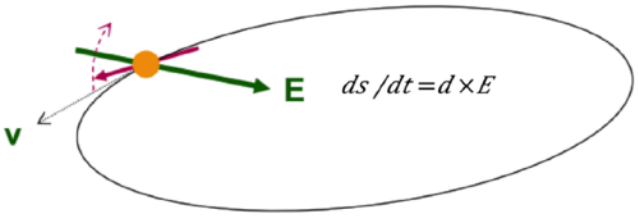
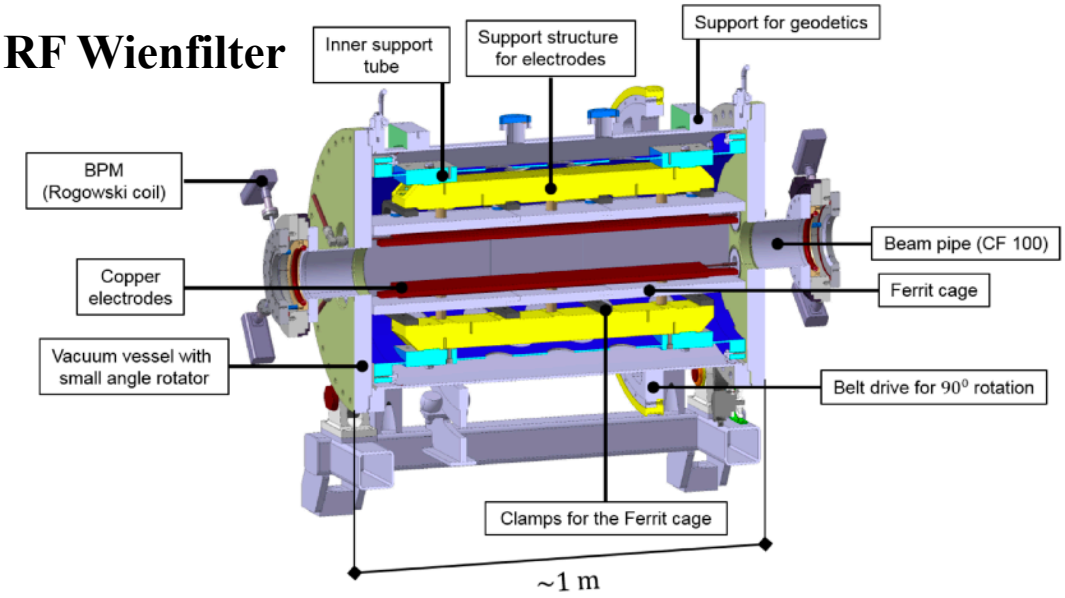
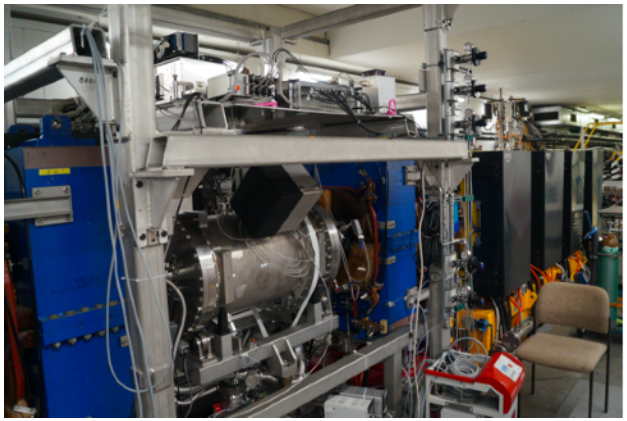
EDM (electric dipole moment) measurement

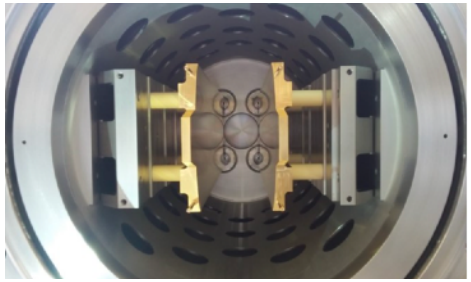
principle: horizintal polarized beam
electric field → buildup of vert. pol.



RF Wienfilter







Lorentz force: $\vec{F_L} = q(\vec{E} + \vec{v} \times \vec{B}) = 0$
$\vec{B} = (0, B_y, 0)$ and $\vec{E} = (E_x, 0, 0)$

in phase with spin precession
→ polarization buildup

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Modality of access

User prepares **research proposal**
or request for test beam
(at existing facilities or new equipment)

⇐ call for proposals
e-mail to potential users
advert scientific journals
dedicated website

⇓ scientific coordinator
at COSY

user selection panel
(experts independent from COSY and FZJ)
evaluates proposal on scientific grounds,
recommends EU supported access

⇓ priority rules
given by EU

free **access to COSY**
and its experimental installation,
reimbursement of travel and subsistence costs

CBAC (user selection panel)

Aulenbacher, Kurt	Univ. Mainz, DE
Kester, Oliver	TRIUMF, CA
Schmidt, Christian Joachim	GSI, DE
Stöhlker, Thomas	GSI, DE
Weber, Marc (Chairperson)	KIT, DE

Meeting: twice per year
last meeting: 1/2 July 2019
next meeting: 3/4 February 2020

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website:
www.ikp.fz-juelich.de/strong2020

Horizon2020

STRONG-2020

Transnational Access to Research Infrastructures

deutsch/englisch

supported projects

Transnational Access to Research Infrastructure (TARI)

STRONG-2020 - Integrating Activity

For European users outside germany the access to COSY is supported by the European Community - Programme: H2020-EU.1.4.1.2. - Integrating and opening existing national and regional research infrastructures of European interest for the time period from 1/6/2019 till 31/5/2023. It is one of the three activities (networking, joint research, transnational access) of the Integrating Activity "The strong interaction at the frontier of knowledge: fundamental research and applications" (acronym: ""STRONG-2020") financed by the European Commission.

This EC-support is available for researchers from member states of the European Community and from associated states, which includes in the frame of this contract : Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom, and Iceland, Liechtenstein, Norway, Switzerland, Israel, Turkey, Croatia, Former Yugoslav Republic of Macedonia, Serbia, Albania, Montenegro.

To apply for the EC-support the researchers have to submit a research proposal to the scientific coordinator of COSY. Such a proposal may concern projects of individual research groups or experiments at existing experimental facilities by joining one of the existing COSY collaborations. The COSY Beam Time Advisory Committee (CBAC) will evaluate the research proposals on the basis of their scientific merit. The CBAC meetings take place twice a year. Approved projects will be supported by covering travel and subsistence costs of the new European users for their stays at COSY and the access costs to the infrastructure COSY with its experimental facilities. For further details please contact:

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Project Manager
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Fax: +49-24 61-61 39 30
e-mail: d.grzonka@fz-juelich.de

Next CBAC-Meeting and deadline for proposals etc. : click here

STRONG-2020 TARI projects at COSY

Beam-based alignment	Andrzej Magiera	Jagiellonian University Cracow, Poland
Towards EDM Polarimetry: Commissioning of the internal polarimeter based on LYSO crystals at COSY	David Mchedlishvili	Tbilisi State University, Tbilisi, Georgia

close window

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slow start of activity

$\Longrightarrow$ increase measures to attract users

inform potential users via e-mail

website with detailed information ← common website STRONG-2020 ?

advert in scientific journals ← combined advert for all TA in STRONG-2020 ?

deliverables will be fulfilled !

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