



AIDA²⁰²⁰

Advanced European Infrastructures
for Detectors at Accelerators

AIDA-2020 - WP10

Test-beam Facilities

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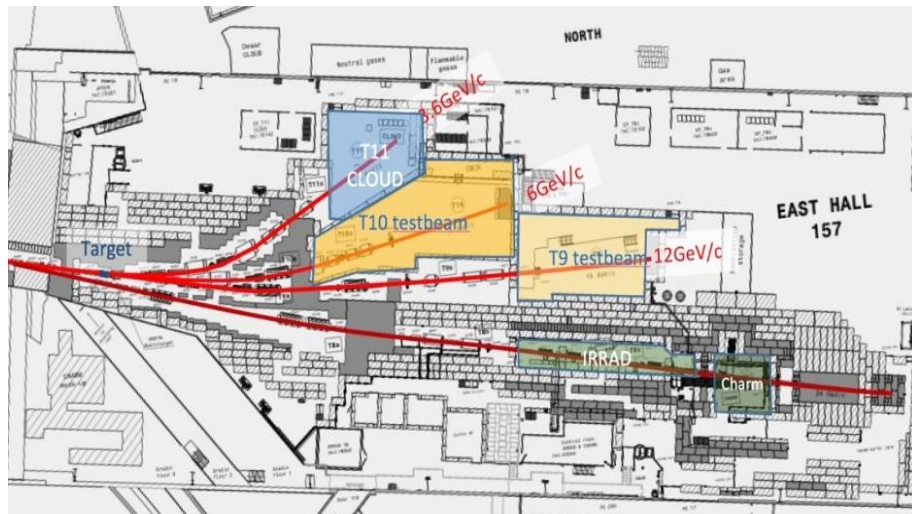


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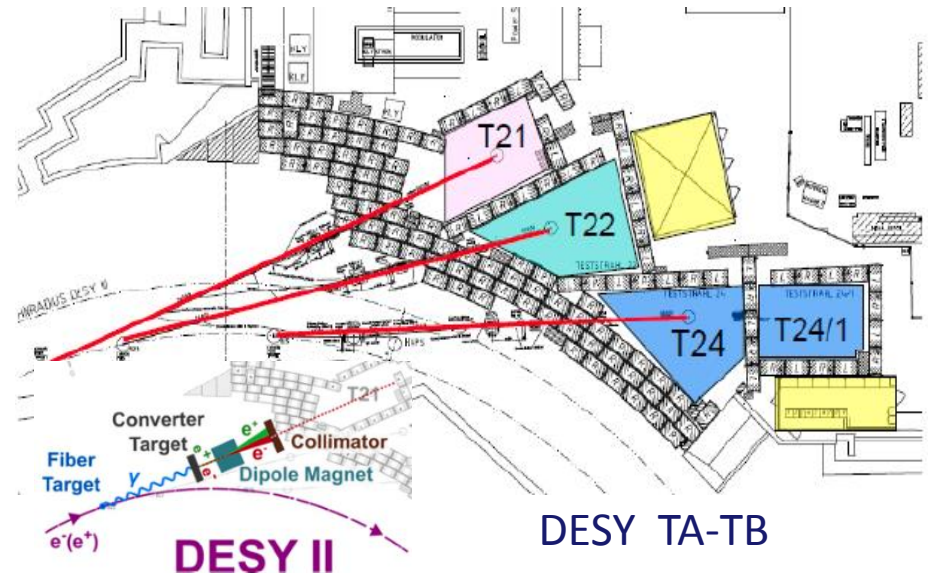
2020

1. WP10 – Test Beam Facilities

- The WP10 Transnational Access is focused on Test Beam.
- It covers two different test beam locations.
 - **CERN TA-TB** (Switzerland) provides 2 beam lines: CERN PS (1 to 12 GeV/c) and SPS (15 to 400 GeV/c)- East / North Areas
 - **DESY TA-TB** (Germany) provides 3 beam lines at DESY II (1 to 6 GeV, energy spread 5% / electron – positron)



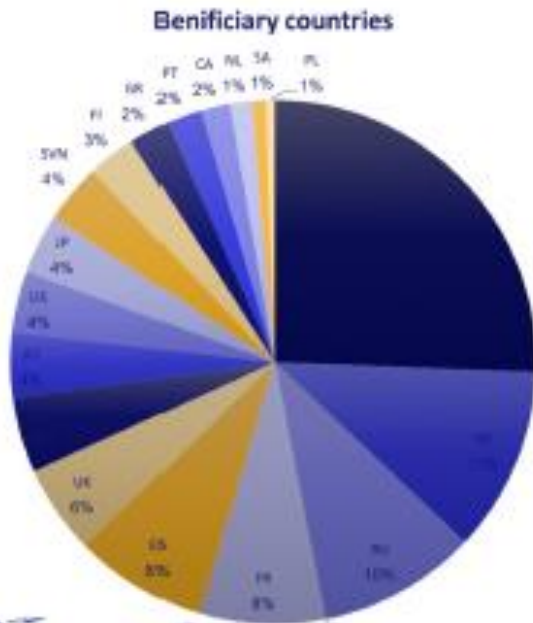
CERN TA-TB (EAST AREA)



DESY TA-TB



- Trans National Access funds were spent by 2017.
- 24 projects supported in 2015 and 18 projects in 2016, then funds ran out (altogether 42 projects)
- 196 visits to CERN supported, 10 days on average.
- Participants from 19 countries





- WP10.1 still allows to simplify test beam users registration at CERN, when they have no affiliation to a CERN experiment.
- CERN test-beams stopped for the Long Shutdown 2 (2019-2020).
 - The Proton Synchrotron East Area is being fully refurbished. In 2021 completely new beam lines and user areas will be available, with better particle selection, and energy range.
 - In the Super Proton Synchrotron North Area, there will be a new experimental area in H4, renovated gas detection and distribution, and an extended GIF facility.
- Only a few projects haven't reported publications yet. Some more are publication are being written.



AIDA-2020-CERN-TB-2015-3	Stephen Wotton	2017 M. K. Baszczyk et al.	Test of the photon detection system for the LHCb RICH Upgrade in a charged particle beam	JINST 12 P01012	Journal publication
AIDA-2020-CERN-TB-2015-4	Alessandro Berra	2016 A. Berra et al.	Longitudinally segmented shashlik calorimeters with SIPM readout	NIM A	Journal publication
		2016 A. Berra et al.	A compact light readout system for longitudinally segmented shashlik calorimeters	NIM A	Journal publication
		2016 R. Thalmeier et al.	EMC studies for the vertex detector of the Belle II experiment	JINST 11 C01044	Conference proceeding
AIDA-2020-CERN-TB-2015-5	Thomas Bergauer	2016 C. Irmier et al.	Construction and test of the first Belle II SVD ladder implementing the origami chip-on-sensor design	JINST 11 C01087	Conference proceeding
		2015 B. Würkner	Beam test data analysis and resolution studies for the Belle II Silicon Vertex Detector	TU Wien	Diploma thesis
		2016 K. Adamczyk, et al.,	The Belle II SVD assembly and mechanics	NIM A	Journal publication
AIDA-2020-CERN-TB-2015-6	Gaia Lanfranchi	2017 W. Baldini et al.	Measurement of parameters of scintillating bars with wavelength-shifting fibres and silicon photomultiplier readout for the SHIP Muon Detector	Jinst	Journal publication
	Marco Bomben	S. Terzo, on behalf of the RD50			
		2016 Collaboration	Radiation Hard Silicon Particle Detectors for HL-LHC - RD50 Status Report	NIM A	Journal publication
AIDA-2020-CERN-TB-2015-7		2015 M. Bomben et al.	Performance of Edgeless Silicon Pixel Sensors on p-type substrate for the ATLAS High-Luminosity Upgrade	IEEE	Journal publication Presentation – Contribution to IEEE NSS 2015
		2015 Marco Bomben et al.	Performance of Edgeless Silicon Pixel Sensors on p-type substrate for the ATLAS High-Luminosity Upgrade	N/A	
		2018 G. Calderini et al.	Active-edge FBK-INFN-LPNHE thin n-on-p pixel sensors for the upgrade of the ATLAS Inner Tracker	NIM A	Journal publication
AIDA-2020-CERN-TB-2015-8	Joao Veloso	2016 L. Moleri et al.	In-beam evaluation of a medium-size Resistive-Plate WELL gaseous particle detector	JINST, 11, 2016, P09013	Journal publication
		2017 L. Moleri et al.	The Resistive-Plate WELL with Argon mixtures – A robust gaseous radiation detector	NIM A, Vol. 845, Pages 262-265, 2017	Journal publication
AIDA-2020-CERN-TB-2015-9	Katja Krueger				
AIDA-2020-CERN-TB-2015-10	Mirko Berretti	2015 M. Berretti	The timing upgrade project of the TOTEM Roman Pots detectors	Nucl.Instrum.Meth. A Volume 824, 11 July 2016, Pages 251–252	Journal publication
		2016 M. Berretti	The diamond time of flight detector of the TOTEM experiment	Nucl.Instrum.Meth. A	Journal publication
AIDA-2020-CERN-TB-2015-11, 22	Oscar Adriani	E. Vannucini for the CaloCube	CaloCube: a new-concept calorimeter for the detection of high-energy cosmic rays in space	To be published on NIM	Conference proceeding
AIDA-2020-CERN-TB-2015-12	Georgios Tsipollitis	2016 Collaboration			
AIDA-2020-CERN-TB-2015-13	Giovanni De Lellis	2017 A. Alexandrov et al.	High-resolution tracking in a GEM-emulsion detector	JINST 12 P09001	Journal publication
AIDA-2020-CERN-TB-2015-14	Giovanni Bencivenni				
AIDA-2020-CERN-TB-2015-15	Harris Kagan	2016 A. Gorisek, et al.	The edge transient-current technique (E-TCT) with high energy hadron beam	NIM A	Journal publication
		2015 M. Dunser, et al.	Test Beam Results of a 3D Diamond Detector	PoS-(EPS-HEP 2015) 288	Conference proceeding
		2015 G. Kasieczka, et al.	Radiation hard diamond sensor	PoS (Vertex 2015) 033	Conference proceeding
AIDA-2020-CERN-TB-2015-16	Richard Wigmans	2015 A. Cardini et al.	The small-angle performance of a dual-readout fiber calorimeter	NIM A808 (2015) 41-53	Journal publication
		2016 R. Wigmans	New results from the RD52 project	NIM A824 (2016) 721-725	Journal publication
AIDA-2020-CERN-TB-2015-17	Martin van Beuzekom	2016 I. Deppner et al.	Performance studies of a single HV stack MRPC prototype for CBM	to be published on JINST	Conference proceeding
		2016 M. Petris et al.	Performance of MGMSRPC for the inner zone of the CBM-TOF wall in heavy ion beam tests		Ann. Report
		2016 P. Lyu et al.	Performance of Strip-MRPC for CBM-TOF in beam test		Ann. Report
AIDA-2020-CERN-TB-2015-18	Alexander Nagaytsev				
AIDA-2020-CERN-TB-2015-19	Giulio Usai	2018 J. Little	The ATLAS Tile Calorimeter Phase-II Upgrade Demonstrator Data Acquisition and Software		Conference Proceeding
AIDA-2020-CERN-TB-2015-20	Katja Krueger				
AIDA-2020-CERN-TB-2015-21	Jörn Lange	2016 J. Lange L. Adamczyk G. Avoni et al.	Beam tests of an integrated prototype of the ATLAS Forward Proton detector	JINST 11 (2016) P09005	Journal publication
AIDA-2020-CERN-TB-2015-22	Oscar Adriani	E. Vannucini for the CaloCube	CaloCube: a new-concept calorimeter for the detection of high-energy cosmic rays in space	To be published on NIM	Conference proceeding
AIDA-2020-CERN-TB-2015-23	Norbert Herrmann	2016 Collaboration			
AIDA-2020-CERN-TB-2015-24	Vincent Boudry	2017 V. Balagura et al.	SiW ECAL for future e+e- collider	JINST 12 C07013	Conference Proceeding
AIDA-2020-CERN-TB-2016-01	Laura Bandieri	2017 E. Bagli et al.	Experimental evidence of independence of nuclear de-channeling length on the particle charge sign	European Physical Journal C 7th International Conference "Charged & Neutral Particles Channeling Phenomena Channeling 2016"	Journal publication Presentation
		2016 V. Guidi et al.	Observation of independence of the nuclear de-channeling length on the particle charge sign		Presentation
AIDA-2020-CERN-TB-2016-02	Alessandro Berra	2016 A. Berra et al.	Longitudinally Segmented Shashlik Calorimeters with SIPM Readout: the SCENTT Experiment	IEEE, NSS	Presentation
		2016 A. Berra et al.	Longitudinally Segmented Shashlik Calorimeters with SIPM Readout	ResearchGate	Journal publication Conference Proceeding, 14th Topical Seminar on Innovative Particle and Radiation Detector
AIDA-2020-CERN-TB-2016-03		2016 L. Pasqualini	A tracking detector to study O(1 GeV) n_m CC interactions	JINST	



AIDA-2020-CERN-TB-2016-04	H kagan	2016 F. Bachmair et al.	Diamond Sensors for Future High Energy Experiments	NIM A831, 370	Journal publication
		2016 N. Venturi et al.	Diamond Pixel Detectors and 3D Diamond Devices	JINST 11 C12062	Journal publication
		2017 J. Jansen et al.	Test beam results of ATLAS DBM pCVD diamond detectors using a novel threshold tuning method	JINST 12 C03072	Journal publication
		2017 R. Wallny et al.	Recent results from beam tests of 3D and pad pCVD diamond detectors	ICHEP 2016	Conference Proceeding
		2017 A. Alexopoulos et al.	Diamond detector technology: status and perspectives	VERTEX2016	Conference Proceeding
		2018 L. Baeni et al.	Diamond detectors for high energy physics experiments	JINST 13 C01029	Journal publication
		2018 H. Kagan et al.	Diamond detector technology, status and perspectives	NIM A924, 297	Journal publication
AIDA-2020-CERN-TB-2016-05	Akindinov Alexander				
AIDA-2020-CERN-TB-2016-06	Francesco Terranova				
AIDA-2020-CERN-TB-2016-07	Giovanni De Lellis				
AIDA-2020-CERN-TB-2016-08	Susanne Kuehn	Andrew Blue on behalf of the ATLAS 2016 Collaboration	Testbeam Results from Pre and Post Irradiated Modules for the Upgrade of the ATLAS Strip Tracking Detector		Poster
		Susanne Kuehn on behalf of the ATLAS 2016 Collaboration	First testbeam results of prototype modules for the upgrade of the ATLAS strip tracking detector	14th Topical Seminar on Innovative Particle and Radiation Detector	Conference Proceeding
		2018 C. Allaire et al.	Beam test measurements of Low Gain Avalanche Detector single pads and arrays for the ATLAS High Granularity Timing Detector	arXiv:1804.00622v1	Journal publication
AIDA-2020-CERN-TB-2016-09	Vladislav Manko	K. A. Balygin, M. S. Ippolitov, A. I. Klimov 2018 et al.,	Use of Large-Area Photodiodes for Improving the Characteristics of an Electromagnetic Calorimeter	Instrum.Exp.Tech. 61 (2018)	Journal publication
AIDA-2020-CERN-TB-2016-10	Andre Rummler	2016 A. Macchiolo et al.	Based on Lead Tungstate Crystals,	NIM	Conference Proceeding, 14th Topical Seminar on Innovative Particle and Radiation Detector
AIDA-2020-CERN-TB-2016-11	Mirko Berretti				
AIDA-2020-CERN-TB-2016-12	Imad Laktineh				
AIDA-2020-CERN-TB-2016-13	Giulio Usai	2018 F. Scuri et al.	Upgrade of the ATLAS Tile Calorimeter for the High Luminosity LHC		Conference proceeding
AIDA-2020-CERN-TB-2016-14	Joern Lange	2016 J. Lange et al.	Beam tests of an integrated prototype of the ATLAS Forward Proton detector	JINST Vol. 24, No. 24 28 Nov 2016 OPTICS EXPRESS 27951	Journal publication
		2016 L. Nozka et al.	Construction of the optical part of a time-of-flight detector prototype for the AFP detector		Journal publication
AIDA-2020-CERN-TB-2016-15	Andrej Gorisek	2016 Andrej Gorisek et al. L. Argemía, I. Asensi Tortajadab, I.	The edge transient-current technique (E-TCT) with high energy hadron beam	NIM	Journal publication
		2018 Berdalovic et al.	Development of the monolithic "MALTA" CMOS sensor for the ATLAS ITk outer pixel layer	TWEPP2018	Conference proceeding
AIDA-2020-CERN-TB-2016-16	Etam Noah	2017 E. Noah et al.	The Baby MIND muon spectrometer for the J-PARC T59 (WAGASCI) experiment		Conference proceeding
		2017 S-P. Hallsjö et al.	Baby MIND: A magnetised spectrometer for the WAGASCI experiment		Conference proceeding
		2017 S. Parsa et al.	Baby MIND Experiment Construction Status		Conference proceeding
		2017 G. Mitev et al.	Synchronization of the distributed readout frontend electronics of the Baby MIND detector	IEEE	Conference proceeding
		2017 A. Mefodiev et al.	Baby MIND: A magnetized segmented neutrino detector for the WAGASCI experiment		Conference proceeding
		2018 S. Parsa et al.	Novel design features of the Baby MIND detector for T59-WAGASCI experiment		Conference proceeding
		2018 S-P. Hallsjö	Baby MIND: A magnetised spectrometer for the WAGASCI experiment		Conference proceeding
2018 S-P. Hallsjö	Charge current quasi-elastic muon neutrino interactions in the Baby MIND detector		PhD Thesis		
AIDA-2020-CERN-TB-2016-17	Vince201nt Boudry				
AIDA-2020-CERN-TB-2016-18	Oscar Adriani	E. Vannuccini for the CaloCube 2016 Collaboration	CaloCube: a new-concept calorimeter for the detection of high-energy cosmic rays in space	NIM	Conference proceeding
		A. Rappoldi and the CaloCube 2016 Collaboration	CaloCube: a novel calorimeter for high-energy cosmic rays in space		presentation