Strong interaction studies in antiproton annihilation (SISTINA)

- 2020 Annual Summary Document for the ISAB FAIR-RO-

1.1 Group list (physicists, staff, postdocs, students):

Name	**Position**
Petre-Constantin BOBOC	Physicist (Research Assistant) – IFIN-HH, *Master Student*
Alexandru-Mario BRAGADIREANU	Physicist (CS III) – IFIN-HH
Stefan-Alexandru GHINESCU	Physicist (Research Assistant) – IFIN-HH, PhD *Student*
Ovidiu-Emanuel HUTANU	Engineer - IFIN-HH*, Master Student*
Alina MOTORGA	Project accountant - IFIN-HH

1.2 Specific scientific focus of group (state physics of subfield of focus and group's role);

Physics subfields: QCD bound states, Hypernuclear Physics.

Taking into account the expertise of our group (ATLAS, EXCHARM, FOCUS, DEAR and SIDDHARTA experiments) we expressed our interest in the measurements dedicated to charmonium and exotic states and in the Hypernuclear Physics with emphasis on Ξ^- atoms were our experience in detecting X-rays coming from transitions in Kaonic exotic atoms would be beneficial for PANDA Collaboration.

1.3 Summary of accomplishments during the reporting period

Since PANDA experiment is now in Construction phase our short-term objectives, for 2020, were focused on research and development activities for PANDA STT sub-detector and its integration in the PANDA control system.

Accomplishments:

- established the software components to be used for the STT Process Variables Database System;
- decided the hardware configuration and ordered a server and a workstation to be used in the STT Process Variables Database System.

2. Scientific accomplishments (max. 3 pages) – Results obtained during the reporting period.

Due to the late contracting of SIDDHARTA project in 2020 we had few time at disposal, about one month, to cope with STT controls. However, we succeed to accomplish the ordering of some hardware components which will assure a good start in 2021 for the STT Process Variables Database System.

3. Group members (table):

- List each member, his/her role in project and the Full Time Equivalent (FTE) % time in project.

Name	Role	FTE
Petre-Constantin BOBOC	Software development	0.00
Alexandru-Mario BRAGADIREANU	Controls Software development, Hardware integration	0.03
Stefan-Alexandru GHINESCU	Software development	0.00
Ovidiu-Emanuel HUTANU	Electronics hardware design, assembly and testing	0.03
Alina-Petronela MOTORGA	Accounting	0.07

- List PhD/Master students and current position/job in the institution.

  Petre-Constantin BOBOC– Master student;

  Stefan-Alexandru GHINESCU – PhD student;

  Ovidiu-Emanuel HUTANU – Master student.

4. Deliverables in the last year related to the project:

Study of Excited Ξ Baryons with the PANDA Detector, PANDA Collaboration G. Barucca et al., (Dec 3, 2020) e-Print: 2012.01776 [hep-ex]

5. Further group activities (max. 1 page):

In 2020 the Multipurpose Rack Control Unit was upgraded- with embedded ethernet and Wi-Fi controllers. The unit was built in the framework of NUCLEU project, a new firmware being developed and tested successfully at the end of 2020.

6. Financial Report (budget usage) for the reporting period (see the Annex).

7. Research plan and goals for the next year (max. 1 page).

The research plan is shown in the table below.

Year	2020				2021				2022				2023			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Multipurpose Rack Control Unit 3.0																
Epics device support software (IOC)																
Operator interface development (OPI)																
STT Controls development																
Process Variables Database System																

The goals are integration of MRCU v3.0 in the EPICS environment and the realization of STT PV database system.

Financial Report 2020

according to the regulations from H.G. 134/2011

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	Type of expenditures	2020
1	**PERSONNEL EXPENDITURES**, from which:	**12,457.00**
	1.1. wages and similar income, according to the law	12,183.00
	1.2. contributions related to wages and assimilated incomes	274.00
2	**LOGISTICS EXPENDITURES**, from which:	**0.00**
	2.1. capital expenditures	73,542.00
	2.2. stocks expenditures	0.00
	2.3. expenditures on services performed by third parties, including:	0.00
3	**TRAVEL EXPENDITURES**	**0.00**
4	**INDIRECT EXPENDITURES – (OVERHEADS) ***	**6,308.00**
	TOTAL EXPENDITURES *(1+2+3+4)*	**92,307.00**

* Specify the rate (%) and key of distribution (excluding capital expenditures).
Indirect Expenditures = General IFIN-HH Overheads (35% from 1+ 2.2 +2.3 +3) + Particle Physics Department Overheads (15.6382 % from 1)

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