ARIES APEC & iFAST SMART PAF Brainstorming and Strategy Workshop

Report of Contributions

Contribution ID: **1** Type: **not specified**

iFAST welcome and intro

Wednesday 30 March 2022 09:00 (20 minutes)

Presenter: ZIMMERMANN, Frank (CERN)

Contribution ID: **2**   Type: **not specified**

Dark sector landscape - SHIP, SHIP upgrades, "eSPS" and others

Wednesday 30 March 2022 09:20 (1h 40m)

Presenter: JACOBSSON, Richard (CERN)

Contribution ID: **3**

Type: **not specified**

The Dark Sector and Searches in Forward Physics

Wednesday 30 March 2022 13:30 (35 minutes)

Presenters: KLING, Felix (DESY); KLING, Felix (University of California, Irvine)

Contribution ID: **4**   Type: **not specified**

Gamma factory concepts and atomic clocks for the dark sector

Wednesday 30 March 2022 11:30 (1 hour)

Presenter: KRASNY, Mieczyslaw Witold (LPNHE, Sorbonne University, Paris, Centre National de la Recherche Scientifique (FR) and CERN)

Contribution ID: **5**   Type: **not specified**

What advanced accelerators could do and possible beam parameters for high energies

Wednesday 30 March 2022 14:05 (50 minutes)

Presenter: ASSMANN, Ralph Wolfgang (DESY)

Contribution ID: **6**　　　　　　　　　　　　　　　　　　Type: **not specified**

Dark sector activities at Fermilab and in the USA ?

Wednesday 30 March 2022 14:55 (55 minutes)

Presenter:　SHILTSEV, Vladimir

Contribution ID: **7**　　　　　　　　　　　　　　　　　　Type: **not specified**

Hybrid EDM ring and axions?

Thursday 31 March 2022 09:00 (45 minutes)

Presenter:　CARLI, Christian (CERN)

Contribution ID: **8**   Type: **not specified**

Discussion: Beam requirements and accelerators for the dark sector

Thursday 31 March 2022 11:00 (1h 15m)

Contribution ID: **9**   Type: **not specified**

Visions on the future requirements for physics research

Thursday 31 March 2022 09:45 (45 minutes)

Presenter: KRASNY, Mieczyslaw Witold (LPNHE, Sorbonne University, Paris, Centre National de la Recherche Scientifique (FR) and CERN)

Contribution ID: **10**   Type: **not specified**

Open Space

Thursday 31 March 2022 12:15 (15 minutes)

Contribution ID: **11**   Type: **not specified**

Machine learning landscape

Thursday 31 March 2022 13:30 (45 minutes)

Presenter: ISCHEBECK, Rasmus (Paul Scherrer Institut)

Contribution ID: **12**   Type: **not specified**

Machine learning challenges

Thursday 31 March 2022 14:15 (30 minutes)

Presenter: FRANCHETTI, Giuliano

Contribution ID: **13**　　　　　　　　　　　　　　　　　　　Type: **not specified**

Discussion and "ad-hoc" contributions

Thursday 31 March 2022 16:30 (45 minutes)

Contribution ID: 14   Type: **not specified**

Adaptive Machine Learning for Time Dependent Effects in Accelerators

Thursday 31 March 2022 14:45 (45 minutes)

Presenter: SCHEINKER, Alexander

Contribution ID: **15**   Type: **not specified**

Overview of Machine Learning Prospects for the CERN accelerator complex

Friday 1 April 2022 09:00 (45 minutes)

Presenter: KAIN, Verena (CERN)

Contribution ID: **16**

Type: **not specified**

Machine learning applications at the LHC and for future colliders (including muons)

Friday 1 April 2022 09:45 (45 minutes)

Presenter: FOL, Elena (CERN)

Contribution ID: **17**   Type: **not specified**

Discussion: (1) Expert Systems, (2) Machine Learning for the Dark Sector

Friday 1 April 2022 11:50 (35 minutes)

Expert systems for optics design or accelerator operation ;
Development of expert systems to replace accelerator designers

Contribution ID: **18**
Type: **not specified**

Possible ML applications for the FCC

Friday 1 April 2022 11:25 (25 minutes)

Presenter: ZIMMERMANN, Frank (CERN)

Contribution ID: **19**   Type: **not specified**

DISCUSSION: Putting the pieces together

Friday 1 April 2022 14:00 (1h 25m)

- Beam requirements and accelerators for the dark sector
- Expert systems for optics design or accelerator operation
- Development of expert systems to replace accelerator designers
- Machine learning for dark sector accelerators
- What did we learn ?
- What are the next steps?
- Can we sketch a roadmap?

Contribution ID: **20**   Type: **not specified**

Dark sector proposals from around the globe & Discussions

Wednesday 30 March 2022 16:20 (1 hour)

Contribution ID: **21**   Type: **not specified**

Machine learning /AI for accelerators at Fermilab and surroundings?

Thursday 31 March 2022 15:30 (30 minutes)

Presenters: SHILTSEV, Vladimir; SHILTSEV, Vladimir

Contribution ID: **22**   Type: **not specified**

Welcome drink & dinner

Tuesday 29 March 2022 20:00 (2 hours)

Meeting at the entrance of the building

Contribution ID: **23**   Type: **not specified**

Dark Sector landscape and future search strategies

Friday 1 April 2022 11:00 (25 minutes)

Presenter: JACOBSSON, Richard (CERN)