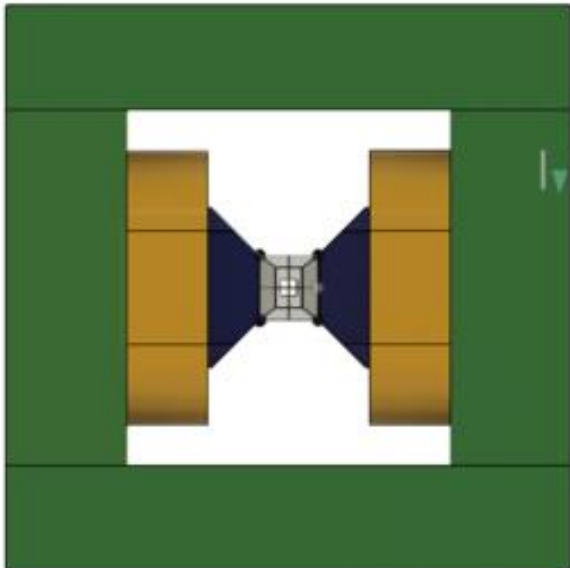


Compact Photon Source Collaboration Meeting

Jefferson Lab, Newport News, VA

4 February 2020

Tanja Horn



History of CPS Meetings

- ❑ 19 November 2014: NPS Collaboration Meeting ([JLab](#))
 - *CPS concept design presented in context of NPS meeting*


- ❑ 21 January 2016: NPS Collaboration Meeting ([JLab](#))

- ❑ 19 January 2017: NPS Collaboration Meeting ([JLab](#))

- ❑ 6-7 February 2017: New Opportunities with High-Intensity Photon Sources ([CUA](#))
 - *Mini-proceedings: arXiv:1704.00816*

- ❑ 23 January 2018: NPS Collaboration Meeting ([JLab](#))

- ❑ 1 February 2019: NPS/CPS Collaboration Meeting ([JLab](#))
 - *First meeting with entire session on CPS*

-  ❑ 4 February 2020: CPS Collaboration Meeting ([JLab](#))

Design Concept
published:
Nucl. Instrum. Meth.
A957 (2020) 163429

CPS Experiments

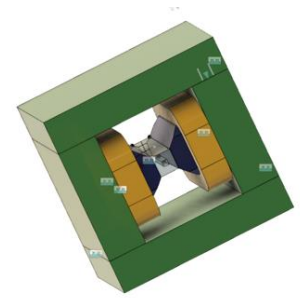
Experiment	Exp #	Beam	Target	PAC Days	Rating
A_{LL} & A_{LS} Polarization Observables in WACS at large s, t, and u	E12-17-008	CPS: $\vec{\gamma}$	$N\vec{H}_3$	46	A ⁻
Timelike Compton Scattering (TCS) off a Transversely Polarized Proton	C12-18-005	CPS: $\vec{\gamma}$	$[N\vec{H}_3]_T$	35	C2
Strange Hadron Spectroscopy with secondary KL beam	C12-19-001	CPS: γ	Be	200	C2

One fully approved, two conditionally approved

CPS Project Status Overview

- ❑ Magnet – yoke and radiation hard coils
- ❑ Cu absorber/inserts –
- ❑ Tungsten powder shield
- ❑ Simulations and software development – full model, background simulation
- ❑ Adaptation to Hall D

CPS 2019 Action Items



- ✓ • Compact optimized High-Intensity Photon Source
 - Write and submit an article describing science and concept of the CPS
 - Submit preliminary proposal for funding
 - Further optimize target scenarios with split coil and large acceptance
 - ? ○ Define engineering changes for CPS concept transfer from Hall A/ to Hall D

- Future physics with NPS and CPS
 - ? ○ For TCS, address three points:
 - does experiment with NPS and transverse target provide unique access to GPD E/orbital angular momentum
 - is it competitive with other methods on the market, e.g., HDICE,
 - Impact of secondaries on detector operation
 - ✓ ○ Consider further high-quality unique science that could be considered with the NPS, with availability of intense electron and photon sources.

**Spectroscopy with secondary KL beam
approved for Hall D**

Goals of this meeting



- ❑ Formulate 2020 action items for CPS construction and science

- ❑ Discuss timeline/requirements of construction of CPS

- ❑ Discuss path forward for Compact Photon Source (CPS) and polarized targets

- ❑ Discuss adaptation to Hall D