SBS Experiments Equipment Requirements

**GEn-RP (GEn/GMn)**

* SBS magnet with sieve plate
* SBS magnet- upstream and downstream field clamp
* Extended Lead wall on CW support
* Lead in magnet cutout
* BB magnet with field clamp and sieve plate
* HCAL
* BL3
* BB detectors – A000000116-0700
* 10 cm Hydrogen/Deuterium Target
* Main EHut, BB EHut and EHut to right of CW
* Neutron Polarimeter Detectors – A170040110-0000

**WAPP**

* same equipment as GEn-RP
* Cu Radiator upstream of Target

**GMn**

* SBS Magnet with sieve plate
* SBS Magnet – upstream field clamp
* BB magnet with field clamp and sieve plate
* HCAL
* BL3 and BL4
* BB detectors
* 10 cm Hydrogen/Deuterium Target
* Main EHut, BB EHut

**nTPE**

* Same equipment as GMn

**Calibration Points**

* SBS Magnet with sieve plate
* SBS magnet-upstream field clamp
* HRS-BL
* HRS-BL detectors
* HCAL
* BL4
* Main EHut

**GEn**

* SBS magnet with sieve plate
* SBS magnet-upstream and downstream field clamps
* BB magnet with field clamp and sieve plate
* BB detectors
* HCAL
* Main EHut and BB EHut
* Polarized 3He Target and access platforms
* BL2

**SIDIS ?(from proposal, needs review)**

* SBS magnet with sieve plate
* SBS magnet-upstream and downstream field clamps
* BB magnet with field clamp and sieve plate
* BB detectors
* GEMs and RICH detectors on SBS arm(CW)
* HCAL
* Main EHut, BB EHut and EHut to right of CW
* Polarized 3He Target and access platforms
* BL3
* Lead wall on CW

**GEp**

* SBS magnet with sieve plate
* SBS magnet – upstream and downstream field clamps
* HCAL
* ECAL with CDet
* SBS detectors on CW A071090100-0000(drawing needs revision)
* 40 cm Hydrogen Target with scattering chamber Snout
* BL1
* Lead wall
* Main EHut, EHut behind HCal or to right of CW

**TDIS ? (from proposal, needs review)**

* Hydrogen/Deuterium target with scattering chamber Snout
* SBS magnet with sieve plate
* SBS magnet upstream and downstream field clamps
* RECOIL detector (large magnet)
* HCAL
* GEMs + RICH detector
* BL?
* Main EHut, EHut to right of CW

Gavalya, Soova, Bogdan, and Brian 2020 Sept. 9th

SBS FFKinematic Settings  09016 Polarized He3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Q2 [GeV2] | θBB  [deg] | dBB [m] | θ48D48  [deg] | d48D48 [m] | dHCAL [m] | Beam Line Configuration # |
| 1.46 | 40.0 | 1.50 | 39.4 | 2.8 | 17 | 2 |
| 3.68 | 34.0 | 1.50 | 29.9 | 2.8 | 17 | 2 |
| 6.77 | 34.0 | 1.50 | 22.2 | 2.8 | 17 | 2 |
| 10.18 | 34.0 | 1.50 | 17.5 | 2.8 | 17 | 2 |

17004 Hydrogen/Deuterium (also known as GEn-Rp)

/



Experimental Points 10cm Hydrogen/Deuterium

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Q2 [GeV2] | θBB  [deg] | dBB [m] | θ48D48  [deg] | d48D48 [m] | dHCAL [m] | Beam Line Configuration # |
| 4.5 | 41.9 | 1.55 | 24.7 | 2.25 | 8.5 | 3 |
|  | 41.9 | 1.55 | 24.7 | 2.25 | 8.5 | 3 (WAPP) |

 09019 Hydrogen/Deuterium

Experimental Points 10cm Hydrogen/Deuterium

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Q2 [GeV2] | θBB  [deg] | dBB [m] | θ48D48  [deg] | d48D48 [m] | dHCAL [m] | Beam Line Configuration # |
| 3.5 | 32.5 | 1.80 | 31.1 | 2.0 | 7.2 | 3 |
| 4.5 | 41.9 | 1.55 | 24.7 | 2.25 | 8.5 | 3 |
| 4.5b | 23.2 | 2.05 | 31.1 | 2.25 | 8.5 | 3 (new for 2020) (nTPE) |
| 5.7 | 58.4 | 1.55 | 17.5 | 2.25 | 11 | 3 |
| 6.0 | 30.5 | 1.85 | 24.7 | 2.25 | 8.5 | 3 (new for 2020) |
| 8.1 | 43 | 1.55 | 17.5 | 2.25 | 11 | 3 |
| 10.2 | 34 | 1.75 | 17.5 | 2.25 | 11 | 3 |
| 12.0 | 44.2 | 1.55 | 13.3 | 2.25 | 14 | 3 |
| 13.5 | 33.0 | 1.55 | 14.9 | 3.1 | 17 | 4 |

Calibration Points: 10cm Hydrogen

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Q2 [GeV2] | θHRS  [deg] | θ48D48  [deg] | d48D48 [m] | dHCAL [m] | Beam Line Configuration # |
| 4.4 | 39 | 25.5 | 3.1 | 17. | 4 |
| 4.4 | 42 | 25.5 | 3.1 | 17. | 4 |
| 6.0 | 61.1 | 14.9 | 3.1 | 17. | 4 |
| 6.0 | 64.3 | 14.9 | 3.1 | 17. | 4 |
| 6.0 | 67.5 | 14.9 | 3.1 | 17. | 4 |
| 6.0 | 69.1 | 14.9 | 3.1 | 17. | 4 |

 07109 Hydrogen

Experimental Points 40cm Hydrogen

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Q2  [GeV2] | θelectronarm [deg] | θ48D48  [deg] | d48D48 [m] | delectronarm [m] | dHCAL [m] | Beam Line Configuration # |
| 5.0 | 29 | 25.7 | 1.6 | 9 | 6.8 | 1 |
| 8.0 | 26.7 | 22.1 | 1.6 | 6.5 | 6.8 | 1 |
| 12.0 | 29.0 | 16.9 | 1.6 | 4.5 | 6.8 | 1 |