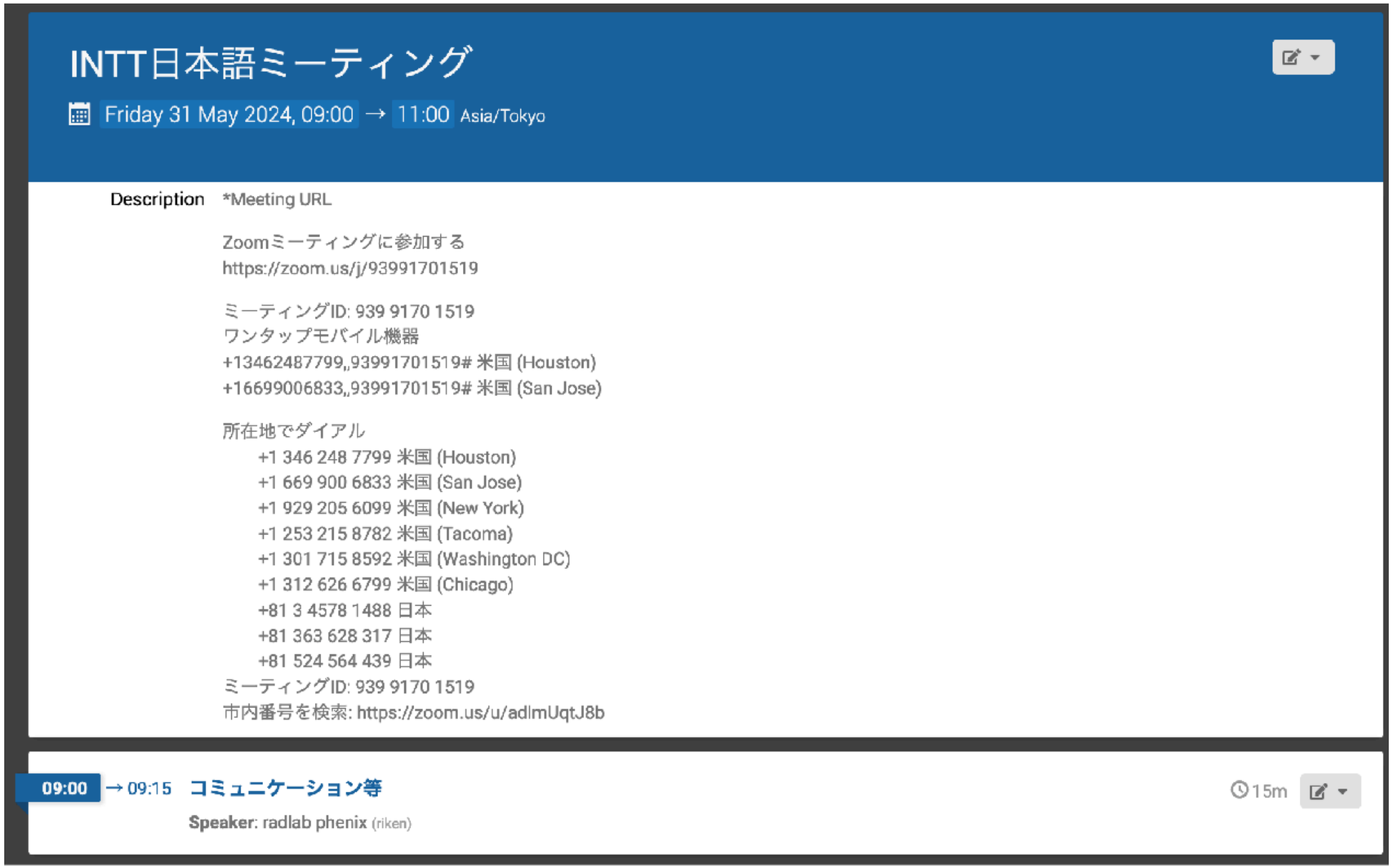
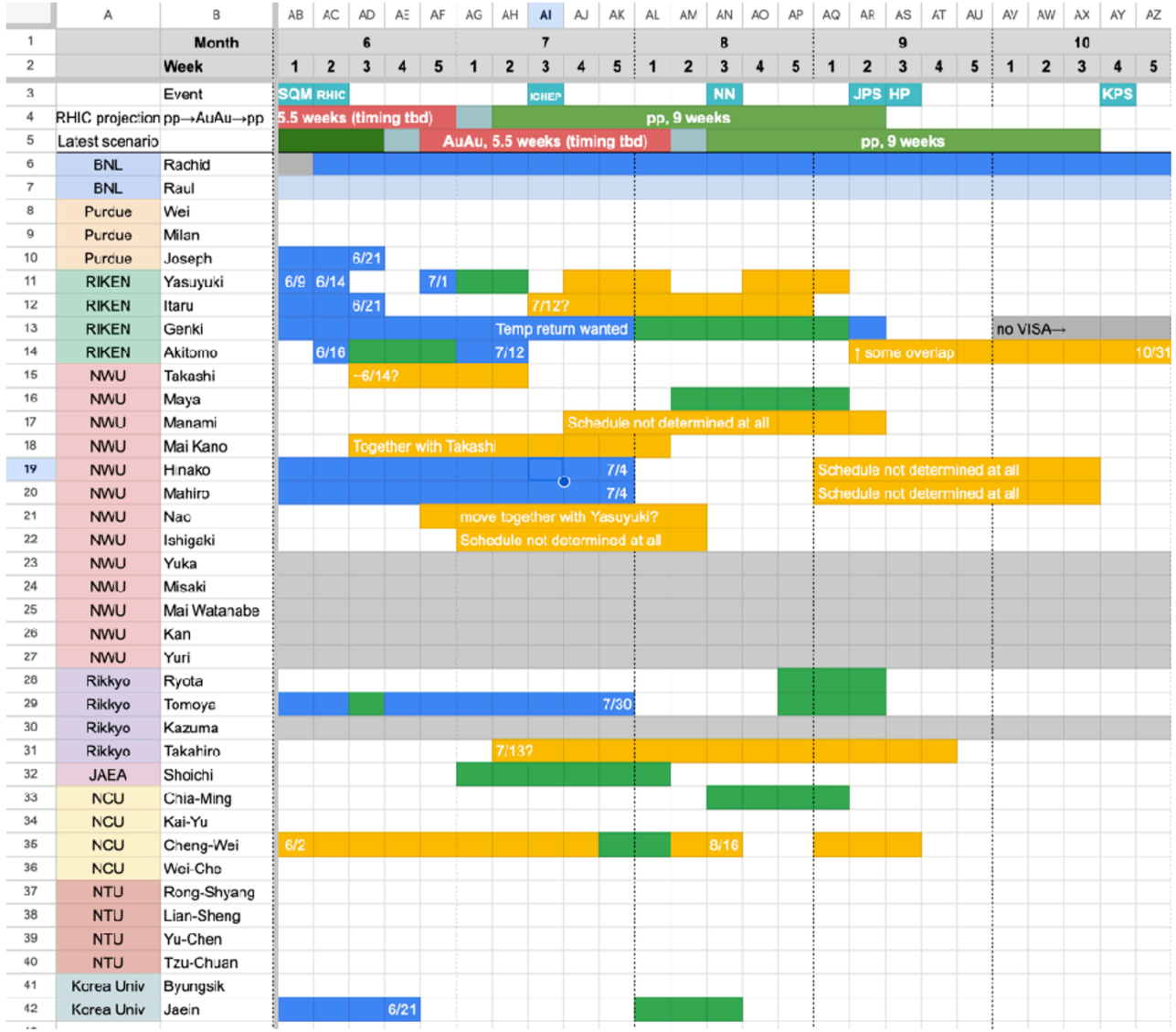
INTT 日本語ミーティング　2024/05/31



ミーティング日程: 毎週金曜日 09:00 (JST)

これからの BNL 滞在予定



菊池：最速日程 7/13。7/15? 9 月末（± 1 週間）まで滞在予定

同時に帰国するスタッフ募集←糠塚

∴帰国は 9/30 ← 考え中…

中川：7 月に BNL へ行くが、ランの状況次第なので未定 (7/12?)

森本・石垣：7 月初旬〜8 月 10 日ごろまで？

宍倉：中川 7 月渡航と同時？

秋葉：7/2 からのシフトを取っているので、6/30 日本発かも？

← 森本さんは一緒に移動？

秋葉：7 月末〜8 月 4 日より前に BNL 滞在かも

秋葉：8 月末〜9/1 BNL 滞在予定（RHIC レビューあり）

加納：6/17 (?)〜7 月末か 8 月初旬 ← NEW

※ 6/19 Heavy Ion Pub@阪大

※ 8/6 – 8/8 チュートリアル研究会@阪大
Hard Probe に向けて予備知識をつける！

Cheng-Wei からのメッセージ：

Cha-Ming Kuo の以下のシフト

8/27-9/3 16:00-0:00 (Data Monitor Operator)
を誰か取ってくれませんか？

シフト申請はまず指導教員に相談してください。　リンク

2024 RHIC/AGS ANNUAL USERS' MEETING

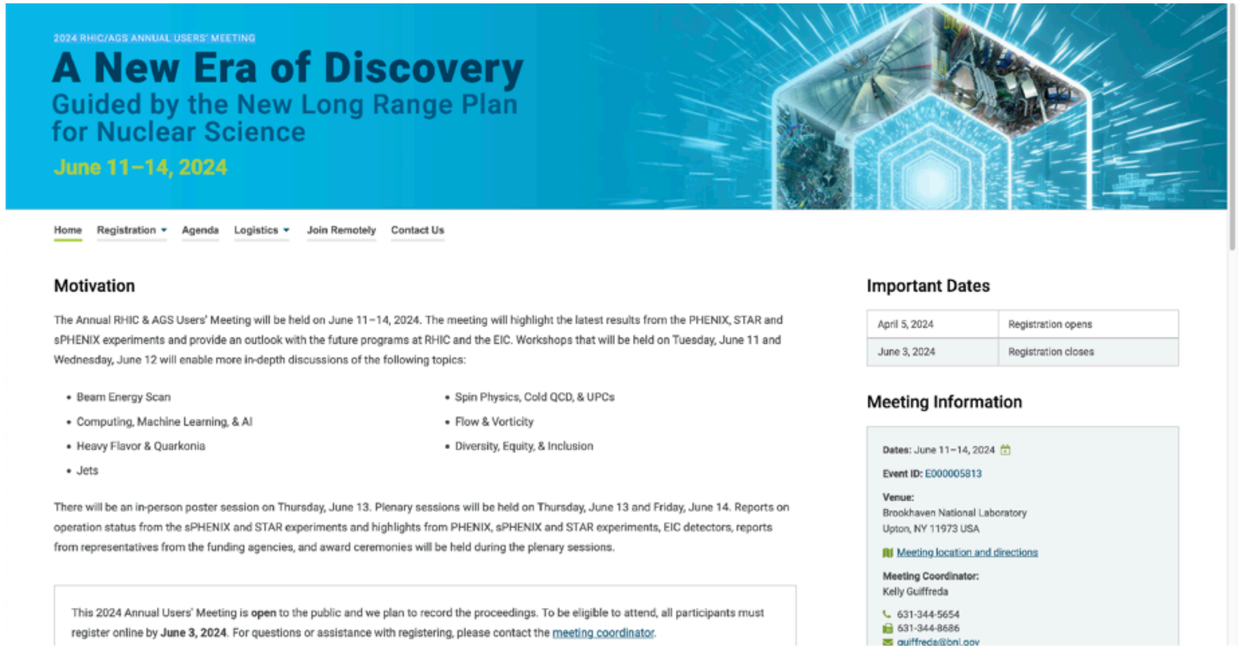
2024/06/11 — 14 に RHIC/AGS ミーティングが開かれます。
去年は

- Joseph: sPHENIX トラッキングシステム（口頭）
- Jaein: INTT（ポスター）

でした。
今年は？

- 糠塚: PHENIX/sPHENIX ColdQCD + INTT で好きなトピック（口頭）
- 辻端
- 池本
- 加藤

参加費 $60 は RBRC が支払ってくれるとのことです。



リンク

Hard Probe 2024

発表予定

- 糠塚：INTT 性能評価・全体的な話

The sPNENIX collaboration has been taking data since 2023 at the Relativistic Heavy Ion Collider in BNL to study the Quark-Gluon Plasma and cold-QCD. A detector complex consisting of the solenoid magnet, a hadron calorimeter, an electromagnetic calorimeter, a time projection chamber, a MAPS-based vertex detector, and the intermediate silicon tracker (INTT). A tracking system formed by the three latter detectors enables us to measure the heavy flavor jets and identify the three upsilon states. The INTT surrounding the collision point azimuthally at about 10 cm away with two layers of silicon strip sensors detects hit points at the intermediate area of the tracking system to have better tracking precision. In addition to that, the INTT also provides timing information of the hits, which is possible only by INTT, thanks to its good timing resolution, to eliminate pile-up events by misidentifying bunch-crossing. This poster presentation will show the status of commissioning with proton-proton collision runs this year and achievements using Au-Au collision data taken in 2023.

- 辻端：Tracking

The sPHENIX experiment has been taking data using RHIC (Relativistic Heavy Ion Collider) at Brookhaven National Laboratory since May 2023. It aims to reveal the nature of Quark-Gluon-Plasma and nucleon structure. INTT(INTermediate Tracker) is one of the sPHENIX tracking detectors which covers full azimuthal angles and pseudorapidity within $\pm$ 1.1. Only INTT has a good timing resolution less than single bunch crossing time ($\sim$106ns) among sPHENIX detectors which prevents pile-up phenomena even in high rate circumstances. In order to make use of this feature, we have been developing a tracking algorithm using INTT.
Tracks are reconstructed in the following procedure. INTT can detect hits (the positions where particles pass) using two-layer barrels. As the first step, one hit in the inner barrel and another hit in the outer barrel are selected as track seeds. Then, the collision point is calculated using multiple track seeds. In the final step, tracks are optimized with the track seeds and the collision point. This algorithm has been applied to simulation data and proton-proton collision data
taken this year. This poster presentation will show the progress in the development of a tracking algorithm.

- 池本：Vertex, Alignment(?)

The sPHENIX experiment has been taking data since 2023 at the Relativistic Heavy Ion Collider(RHIC) at Brookhaven National Laboratory, USA. This experiment aims to study the properties of the Quark-Gluon Plasma and incorporates the intermediate silicon tracker INTT that we have developed.The INTT consists of two cylindrical layers of silicon detectors that
can precisely measure the passage positions of charged particles.By using the collision point (vertex) of ions and the measurement points from the INTT, we can reconstruct the particle tracks.
However, the INTT has lower resolution and a wider beam closing in the z-axis than in the x and y axes. It is necessary to determine the vertex positions accurately, especially along the z-axis.
Additionally, discrepancies can occur between the actual position of the detector and its theoretical position. Such discrepancies cause measurement points to shift, leading to incorrect track reconstrution. To correct for this, it is necessary to align the detector positions in the software, a process called alignment.This poster presentation will show the development process of the vertex reconstruction method and report on the current status of alignment verification using proton-proton collision data obtained in 2024 with the optimal vertex positions.

日本物理学会

一般講演の申し込みが始まりました。申込みは早めに行いましょう。
申し込む前に、INTT 日本グループのメーリングリストへ通知するのがいいと思います。
発表予定

- 中川：sPHENIX スピン（核子構造セッション）
- 糠塚：INTT 性能評価（検出器？核子構造？）
- 蜂谷：EIC 検出器（シンポジウム）
- ??：INTT 検出効率（検出器）