

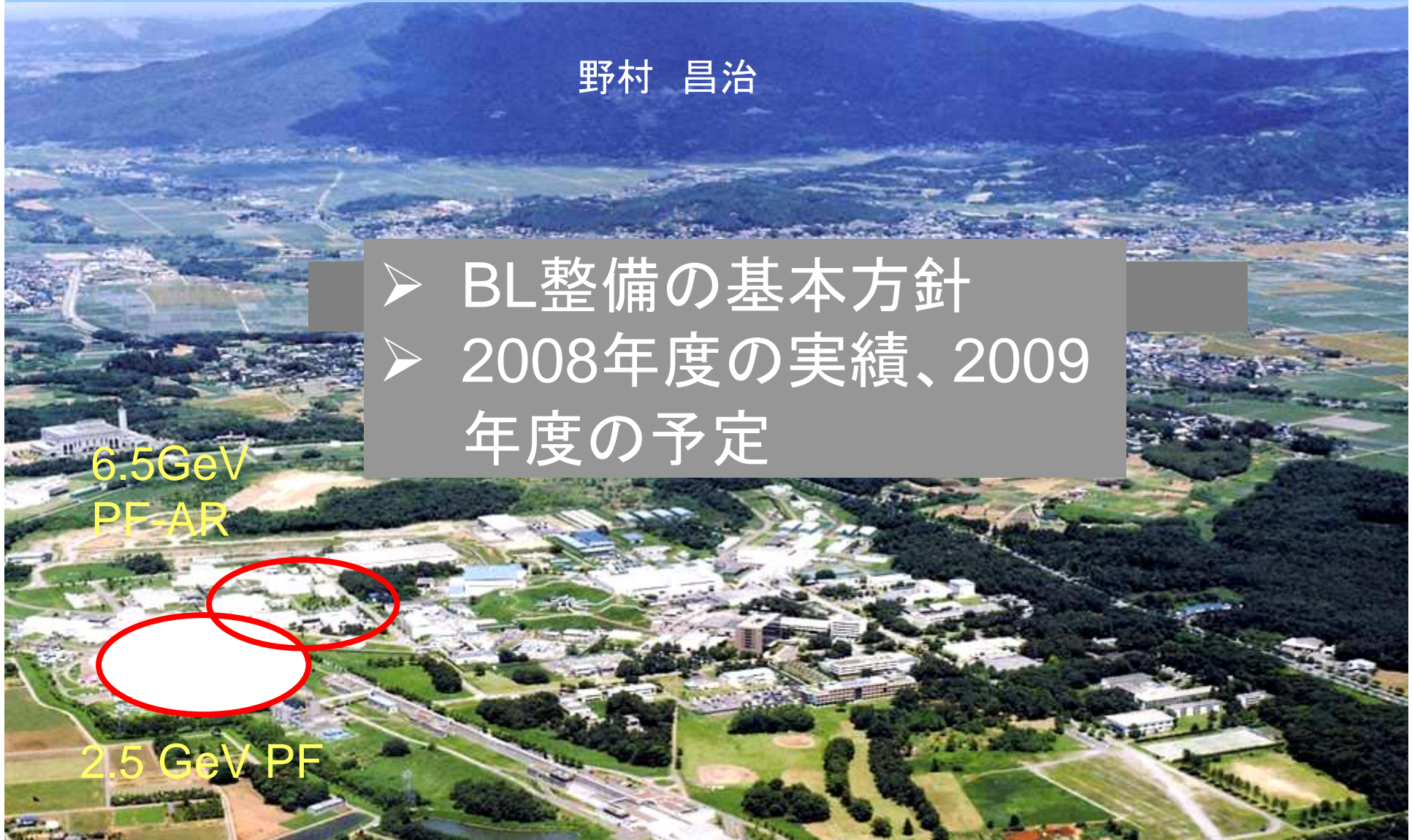
# PF/PF-ARビームライン・測定装置の開発状況 と整備計画

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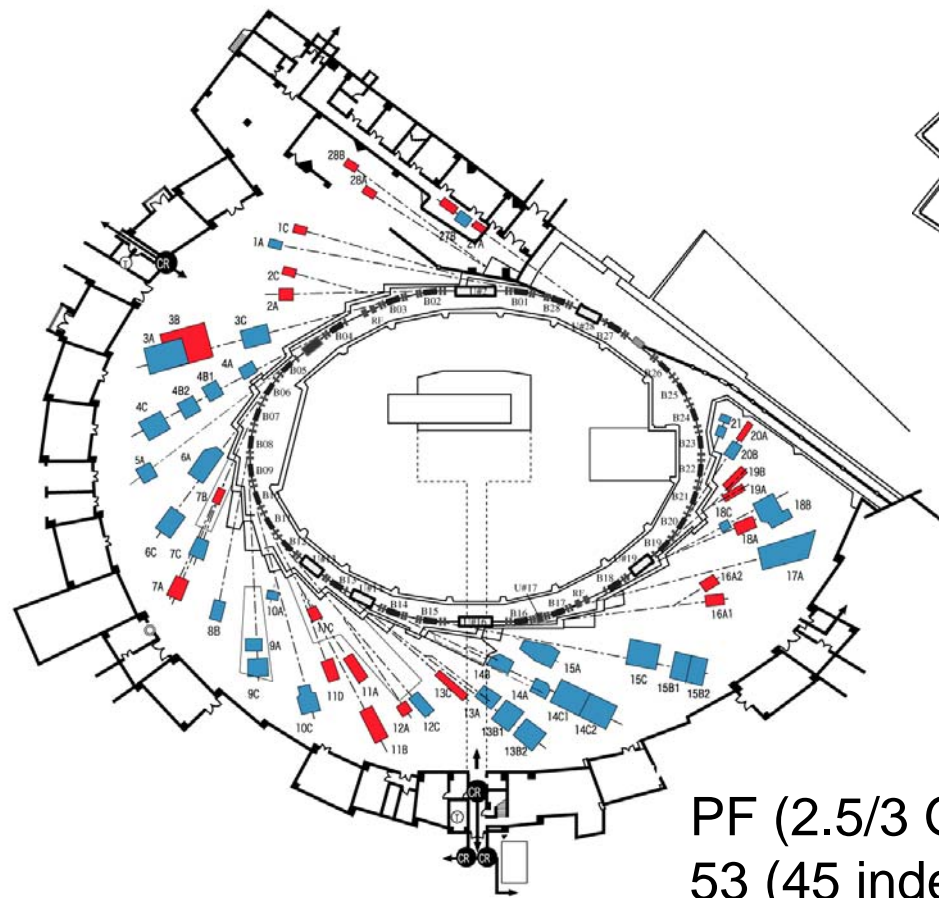
- BL整備の基本方針
- 2008年度の実績、2009年度の予定

6.5GeV  
PF-AR

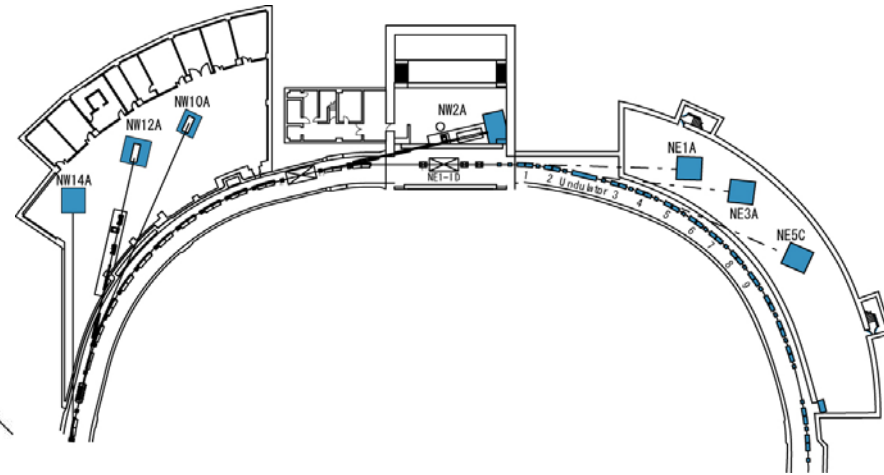
2.5 GeV PF





# Plan view of experimental halls



PF (2.5/3 GeV, 450 mA, MB(SB))  
53 (45 independent) stations



PF-AR (6.5 GeV, 60mA, SB)  
7 (7 independent) stations

-  : Experimental Stations for Hard X-rays
-  : Experimental Stations for VUV and Soft X-rays

# BL統廃合の目的

- 研究の質的・量的向上
- 挿入光源BLの増強
  - ↳ modification of PF lattice(2005)
  - ↳ dedication of PF-AR to SR(2000)
  - ↳ construction of N/NW hall on PF-AR(2001)
- “hybrid” 問題の解決; X-ray & VSX.  
多目的ステーション → 目的別ステーション  
装置の入替による無駄、作業空間等の改善
- スタッフ数と比較して過大なBL数の問題緩和

# Beam line strategy

## at 6.5GeV PF-AR ring

- high energy  $\longrightarrow$  X-ray experiments
- single bunch (1.26 $\mu$ s interval)  $\longrightarrow$  time-structure

5 IDs + 3 dipoles for X-ray use

## at 2.5GeV PF ring

- medium energy  $\longrightarrow$  wide energy range

5 IDs for VUV/SX at long/medium straights

4 IDs for HX at short straights (1 in design stage)

2 IDs for HX at medium straights (MPW, VW)

# ID BL strategy at the PF

## long (9m) and medium (~5m) straights

- 5 for VUV/SX, among 7
- Full use of elongated straight sections
- Solve the HX-VSX hybrid problem; dedicate to U
- One single-application, one semi-specific or rather multi-purpose branch for one BL

## Short (~1m) straights

- Newly created 4 straight sections.
- Dedicate them to (soft) X-ray experiments

# Progress of BL upgrades at PF-AR

## ID beamlines

NE1: high pressure + nuclear resonance (2009) → 亀掛川

NE3: structural biology (pharmaceutical BL) (2008) → 山田

NW2: time-resolved DXAFS (2001)

NW12: structural biology (2002)

NW14: time-resolved XD/XAFS (2005)

## bending beamlines

NE5C: XD under high pressure (1990)

NE7A: XD under high pressure + imaging (2009)

NW10A: high energy XAFS (2005)

# Progress of ID BL upgrades at PF

## VUV/SX

BL-2(9m): SX spectroscopy, emission

BL-13: studies of functional organic materials(2009) → 間瀬

BL-16(9m): fast polarization switching (2007) → 雨宮

BL-19: spin resolved PES/ emission (by Univ. of Tokyo)

BL-28A/B: ARPES (2004/2006)

## HX

➤ short straights (1m)

BL-1: structural biology (2008) → 松垣

BL-3: structural material science (2006)

BL-15: *now using dipole radiation*

BL-17: structural biology (2005)

➤ medium straights

BL-5: structural biol.(2003), BL-14(VW): phase contrast imaging

# Renewal of Beamlines

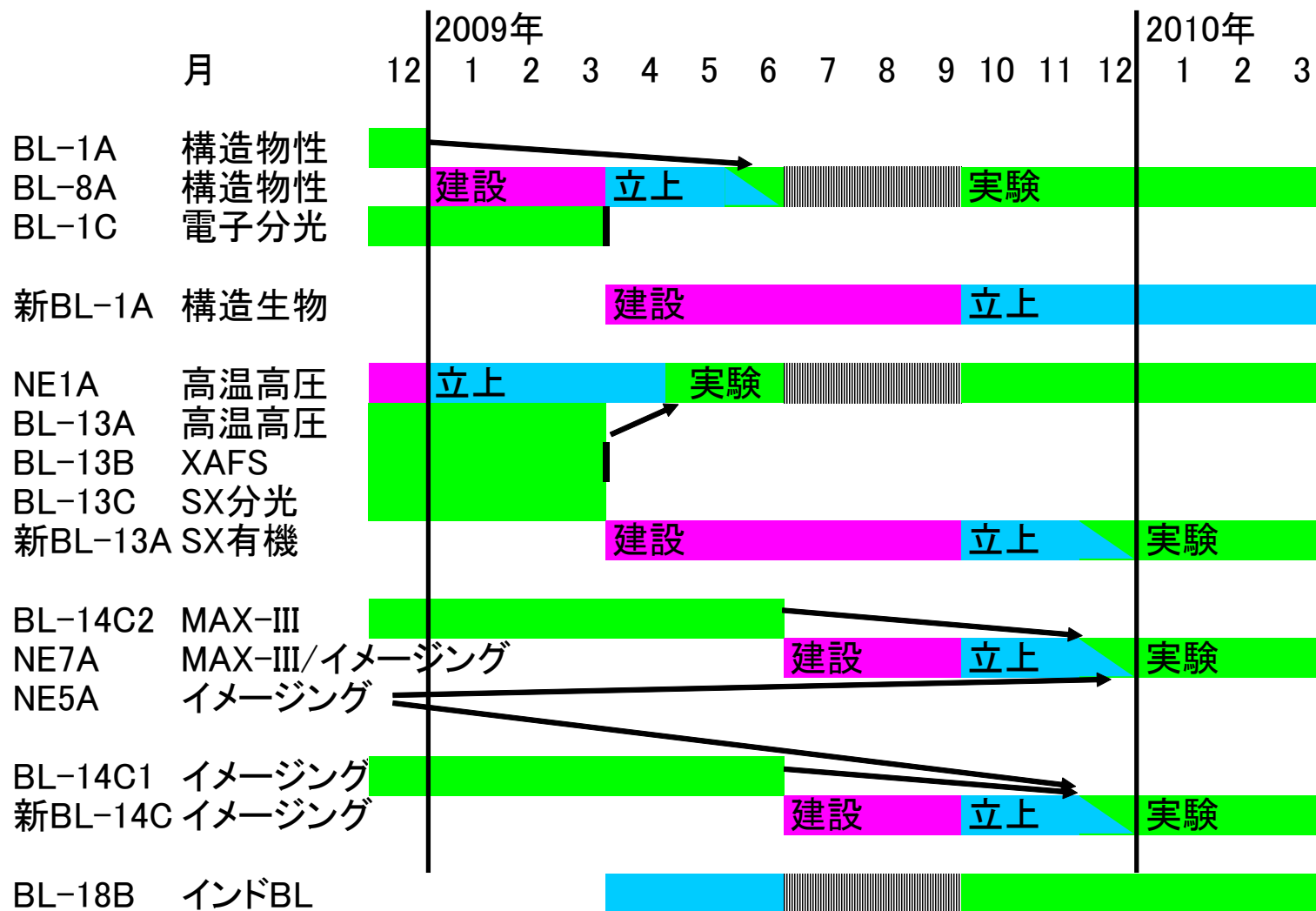
VSX-ID/X-ID /Bend

FY	commissioned	decommissioned
2004	BL-28A	BL-17A, 17B, 17C, 18B
2005	<u>BL-17A</u> , 18B, <u>NW14A</u> , <u>NW10A</u>	BL-12B, 10B, 6B, 6C
2006	<u>BL-28B</u> , 3A, 6C	BL-16A, 3A, 3C1, 3C2
2007	BL-16A	BL-16B, 8A, 8B
2008	<u>NE3A</u> , NE1, 8A, 8B	NE3A, NE1A1, NE1A2, NE1B, NE5A, NE5B, BL- 1A, 1B, 1C
2009	<u>BL-1A</u> , NE7, BL-14C, BL-13	BL-1C, 14C1/C2, 13A, 13B1, 13B2, 13C

use external funds



# ビームラインのリニューアルスケジュール



# パズルを解くために

- NE1(高温高圧下回折・核共鳴)建設 ← アステラス製薬  
旧NE1B(MCD)→16A、旧NE1A1(Compto)/1A2(医学)→閉鎖
- NE3(製薬)建設 ← アステラス製薬  
旧NE3(核共鳴)→一部NE1A、残りは閉鎖、  
NE5A(イメージング)→NE7A
- BL-1A(ターゲットタンパク)建設 ← ターゲットタンパクP  
旧1A(構造物性)→8A、旧1B(構造物性)→8B、  
旧1C(光電子分光)→閉鎖/28A、13A、16A
- BL-13(有機機能性物質研究)建設  
旧BL-13A(高温高圧)→NE1A、旧13B(XAFS)→他のXAFS-BL
- BL-14Cのイメージング専用化  
BL-14C2(MAX-III)→NE7A(新設)
- BL-18B貸与(インドB)L ← インドDST
- BL-16で高速可変偏光実験の実現(2010)←量子ビーム基盤技術
- BL-7B閉鎖(2009夏:東京大理)

# number of experimental stations

