



RIKEN
NiSHiNA
CENTER

E(U)RICA Introduction

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Organizational Matters



Breakfast, Lunch

Organizational
Matters

❖ Meals

❖ RIBF Tour

❖ Workshop Party

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Introduction

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- At **main cafeteria**:

- ❖ Follow someone who knows the way

- **Meal card** for payment:

1. Get one for yourself

- ❖ Deposit of 1000 ¥(will be refunded)

- ❖ Charge card with ~ 1000 ¥(remainder will be refunded)

- ❖ But usually **long queue**

- ❖ If planning to come again to RIKEN: get a card

2. **Team up** with someone who has a card

- ❖ Get receipt

- ❖ Don't forget to repay your debt



RIBF Tour

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❖ Meals

❖ **RIBF Tour**

❖ Workshop Party

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Introduction

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- Tomorrow during lunch break
- Meet here at 12:15
- How many people are interested?
- Sign up sheet outside



Workshop Party

Organizational
Matters

❖ Meals

❖ RIBF Tour

❖ **Workshop Party**

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Introduction

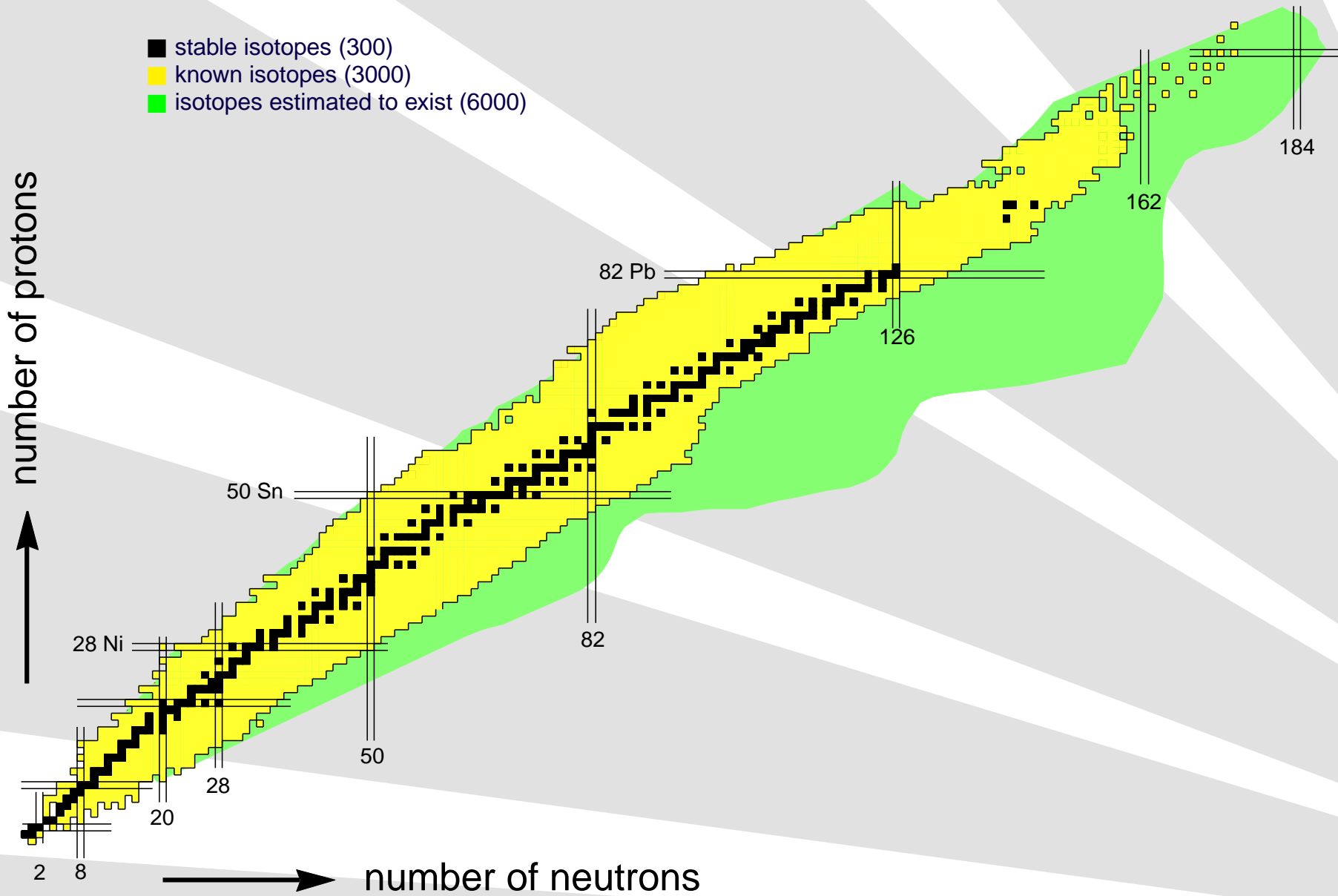
E(U)RICA WS 2011

- Today from 6 pm until 8 pm
- Plenty of good Japanese and western food
- **Costs:** 3000 ¥
 - ❖ Sign up sheet outside.
 - ❖ Please **pay** after the first session before going to lunch

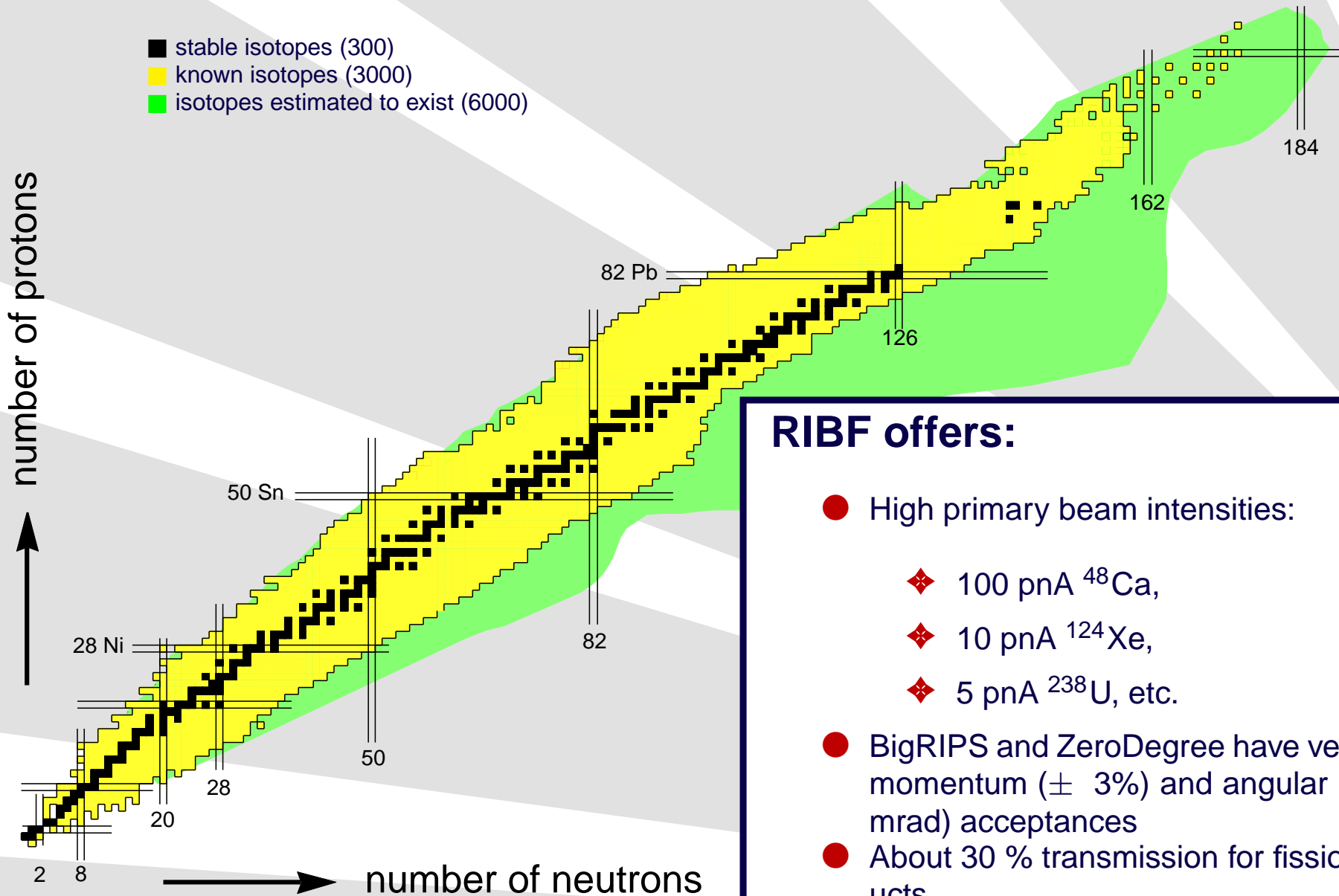


E(U)RICA Introduction

Nuclear Chart



Nuclear Chart



RIBF offers:

- High primary beam intensities:
 - ◆ 100 p nA ^{48}Ca ,
 - ◆ 10 p nA ^{124}Xe ,
 - ◆ 5 p nA ^{238}U , etc.
- BigRIPS and ZeroDegree have very large momentum ($\pm 3\%$) and angular (80,100 mrad) acceptances
- About 30 % transmission for fission products



Requirements for Effective Decay Spectroscopy of Exotic Nuclei

Organizational Matters

E(U)RICA Introduction

❖ Requirements

❖ Gammapool

❖ Cluster Detector Timeline

❖ RISING Setup at GSI

❖ What is E(U)RICA?

❖ E(U)RICA Location

❖ Status and Timeline

E(U)RICA WS 2011

- High resolution
 - ❖ Distinction between close-lying γ -ray lines
- High efficiency
 - ❖ γ - γ coincidences
- High granularity
 - ❖ Overcome “prompt”-flash problem
- Good ancillary detectors
 - β - γ , direct timing, etc.



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- Good ancillary detectors
 - β - γ , direct timing, etc.
- All four requirements should be fulfilled



Requirements for Effective Decay Spectroscopy of Exotic Nuclei

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- Need many Ge detectors
 - ❖ Not available at RIKEN
 - ❖ Collaborate
 - Gammapool: Coordination of the resources for γ -ray spectroscopy in Europe
 - Form new collaboration



Gammapool Campaigns

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Setup	Place	Request	Detector	Period	2007	2008	2009	2010	2011
Gerda	LNGS	1	Cluster Capsule	till end 2008	Gerda				
Agata R&D	Orsay	1	Cluster Capsule	till end 2008	Agata R&D				
Rising	GSI	all	Clusters	end 2010	Rising			Lol	
Jurogam II	JYFL	30 26	Clovers AC				Jurogam II: 28 Det + 24 AC		
Oscar	Orsay	4 4	Clovers AC	all 2008			Oscar: 2 Det + 2 AC		
Clara	LNL	all	Clovers		Clara				
HIL Lol	Warsaw	20	Phase I	2009-2012			HIL	Lol	
Jurogam II	JYFL	18	Phase I				Jurogam II: 18 Det + 15 AC		
Jurogam I	JYFL	39	Phase I		Jurogam I				
Orgam I Lol	Orsay	10	Phase I	till June 2009			Orgam I	Lol: 10 Det + 10 AC	
Orgam II Lol	Orsay	30	Phase I	from July 2009				Orgam II	Lol
Euclides	LNL	all	Euclides	end 2009	Euclides				
other request	KVI	4	any detector	Nov-Dec 2007	???				
Exogam	Ganil	all	nWall	till Dic 2009	Exogam				



Cluster Detector Time-line:

EUROBALL → RISING → PreSpec → E(U)RICA?

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- Laboratori Nazionali di Legnaro, Italy, 1997-1998
- Institut de Recherches Subatomiques, Strasbourg, France, 1999-2003
- GSI Helmholtzzentrum für Schwerionenforschung, Darmstadt, Germany, 2003-2011

❖ RISING

- Fast-Beam campaign, 2003-2005
- g-RISING campaign, 2005
- Stopped-Beam campaign, 2006-2009

❖ PreSpec

- Fast-Beam campaign, 2010-2011
- Switch to AGATA in 2012

RISING Setup at GSI

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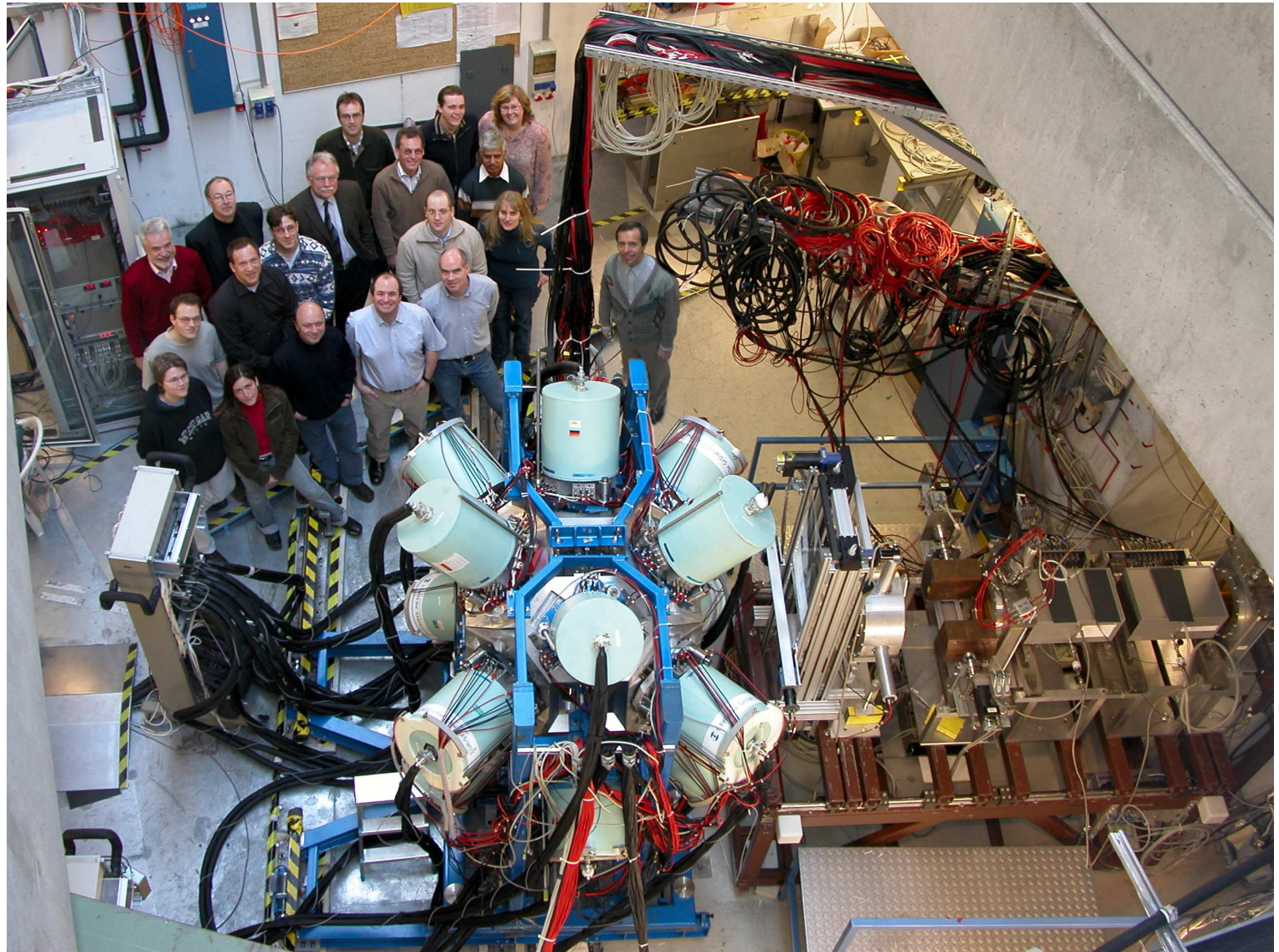
E(U)RICA
Introduction

- ❖ Requirements
- ❖ Gammapool
- ❖ Cluster Detector
- Timeline

❖ **RISING Setup at
GSI**

- ❖ What is
E(U)RICA?
- ❖ E(U)RICA
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- ❖ Status and
Timeline

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What is E(U)RICA?

E(U) ROBALL

RI KEN

C luster

A rray

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What is E(U)RICA?

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E(U) ROBALL

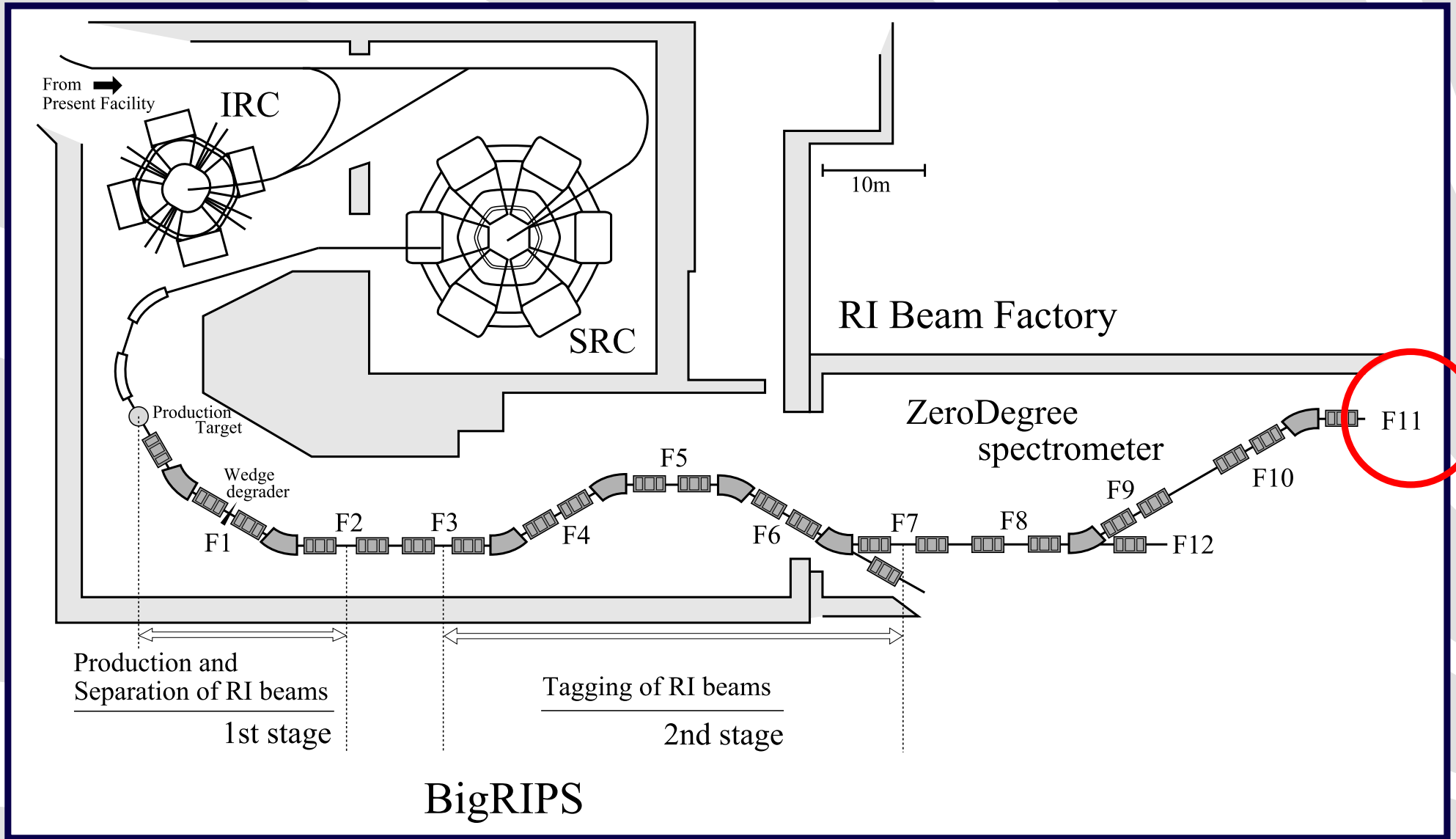
RI KEN

C luster

A rray

- Only the preliminary acronym
- Collaboration that uses the Cluster array at RIKEN
- 15 Cluster detectors with RISING
 - ❖ 105 crystals
 - High granularity
 - 15 % photopeak efficiency at 662 keV

E(U)RICA Location





E(U)RICA Status and Time-line

- April: Sent Letter of Intent to Gammapool
- Last week: Construction proposal for 9th RIBF NP-PAC submitted
- Today: 1st E(U)RICA Workshop

E(U)RICA Status and Time-line

- April: Sent Letter of Intent to Gammapool
- Last week: Construction proposal for 9th RIBF NP-PAC submitted
- Today: 1st E(U)RICA Workshop
- Proposed time-line:

Task \ Time	2011									2012		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Letter of Intent												
Last PreSpec Experiment												
E(U)RICA Workshop												
Construction Proposal												
Disass. of PreSpec Array												
MoU and Proposal												
Shipment of Support Structure												
Shipment of Electronics												
Shipment of Detectors												
Construction of LN2 Pipeline												
Construction of Rail System												
Assembling of E(U)RICA												
Beam Time at RIBF												
E(U)RICA Commissioning												
RIBF NP-PAC Meeting												
E(U)RICA Experiments												



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Workshop Aims

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❖ Aims

❖ Structure

❖ Working Tasks

- Form collaboration
- Decide on the name
- Elaborate physics case
 - ❖ To be included into formal proposal to Gammapool
- Discuss:
 - ❖ Organizational structure
 - ❖ Work tasks



Organizational Structure

Organizational Matters

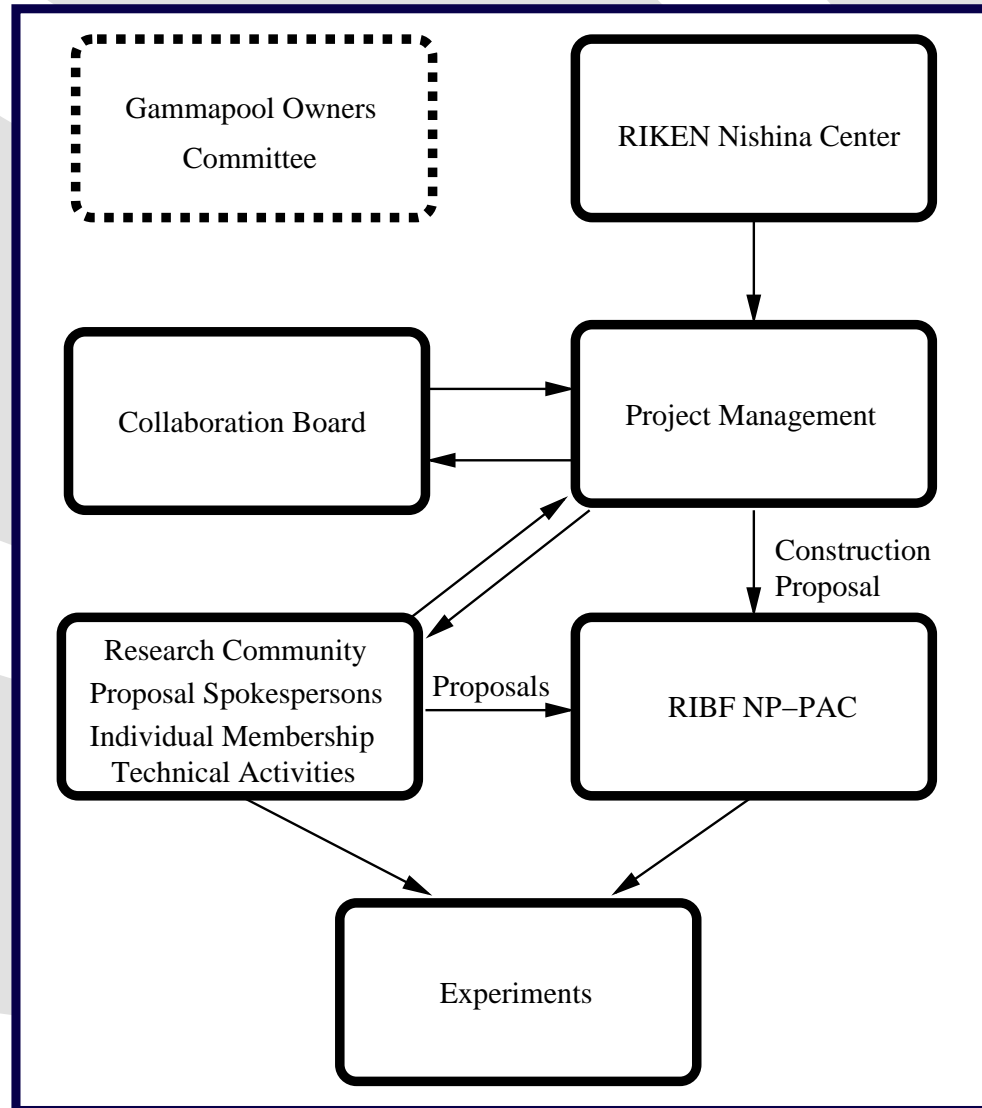
E(U)RICA Introduction

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❖ Aims

❖ **Structure**

❖ Working Tasks





Work Tasks

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Introduction

E(U)RICA WS 2011

❖ Aims

❖ Structure

❖ Working Tasks

● Infrastructure

- ❖ Liquid nitrogen pipeline
- ❖ Liquid nitrogen filling system
- ❖ UPS system
- ❖ power converter
- ❖ cables

● Mechanics

- ❖ support structure
- ❖ rail system

● Logistics

- ❖ Shipment of detectors, electronics, support structure

● Electronics

● Data acquisition and analysis



Summary

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E(U)RICA
Introduction

E(U)RICA WS 2011

❖ Aims

❖ Structure

❖ Working Tasks

- Main Topics:

- ❖ Physics case for E(U)RICA

- ❖ Start discussing:

- Organizational structure

- Work tasks

- Important:

- ❖ **Informal** initiation workshop

- ❖ Please ask questions any time



THE END



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Backup slides from now