

# An Outline of 150 MeV FFAG Accelerator in KEK

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T. Adachi, M. Aiba, K. Koba, S. Machida, Y. Mori,  
R. Muramatsu, A. Muto, C. Ohomori, I. Sakai, Y. Sato,  
M. Sugaya, A. Takagi, R. Ueno, T. Yokoi, M. Yoshii,  
M. Yoshimoto, Y. Yuasa, Y. Yonemura and Joe Nakano  
- KEK FFAG group -

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## Contents

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- A Schematic view of 150 MeV FFAG Accelerator
- Brief schedule of 150 MeV FFAG project

## Introduction – 150MeV FFAG Synchrotron

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### ***PoP FFAG***

**PoP; Proof of Principle machine**

### ***150 MeV FFAG***

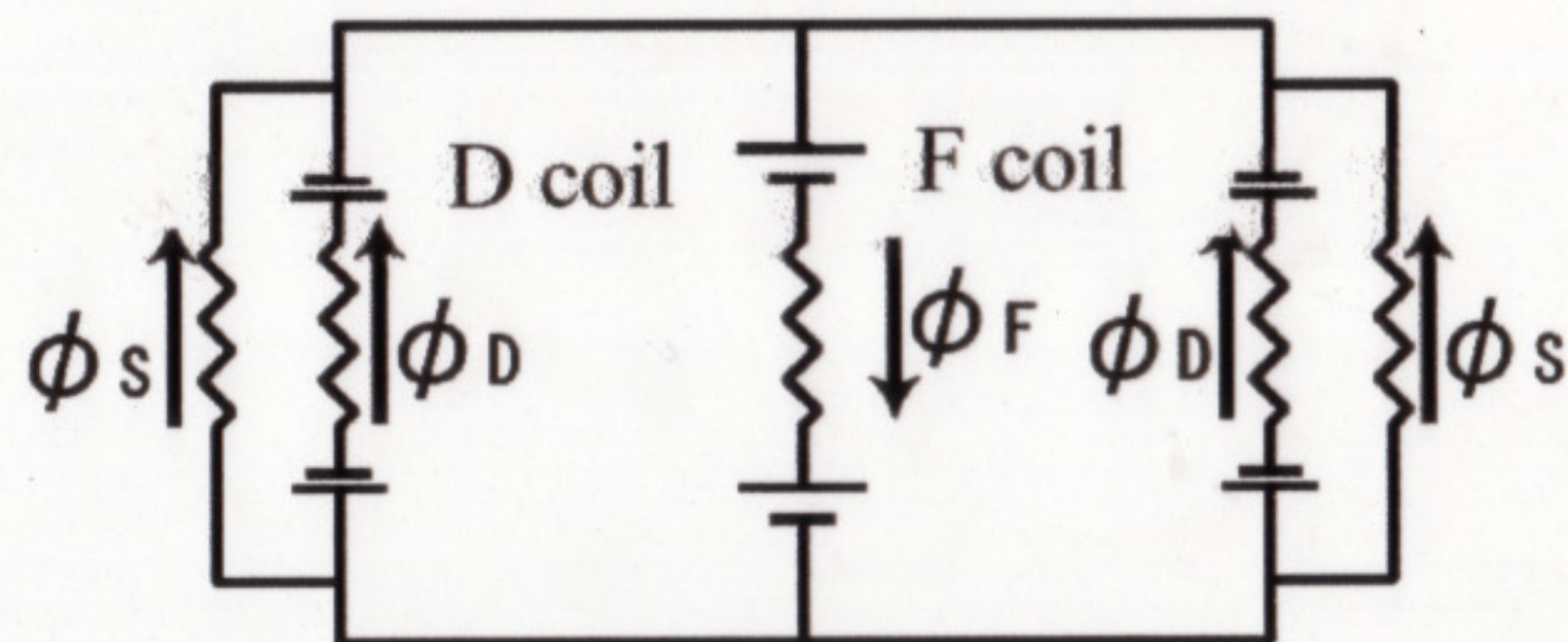
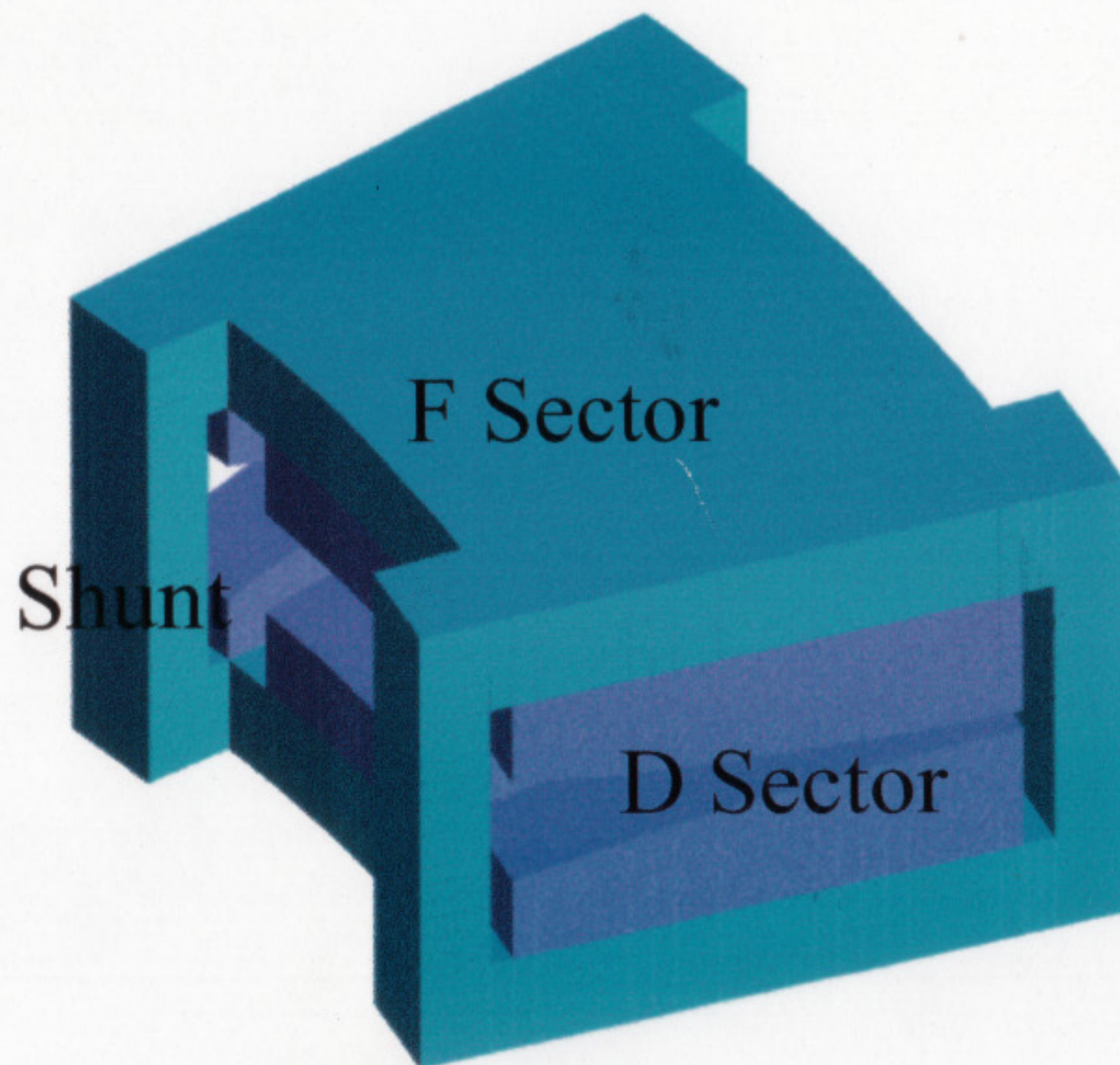
**A prototype of practical machine**

*five-year plan ...fiscal 2001-2005*

1. Extraction of the beam high repetition rate in ~1kHz
2. Development of the 3dimensional spot scanning
  - 3dim. Spot scanning system
  - Real time dose measurement system with detecting the supersonic

## 150 MeV FFAG - Return Yoke Free Magnet

- “Return Yoke Free Magnet”  
The return yoke of Focusing sector is removed.



$\Phi_F$ : Magnetic field in F Sector

$\Phi_D$ : Magnetic field in D Sector

$\Phi_S$ : Magnetic field in Shunt Yoke

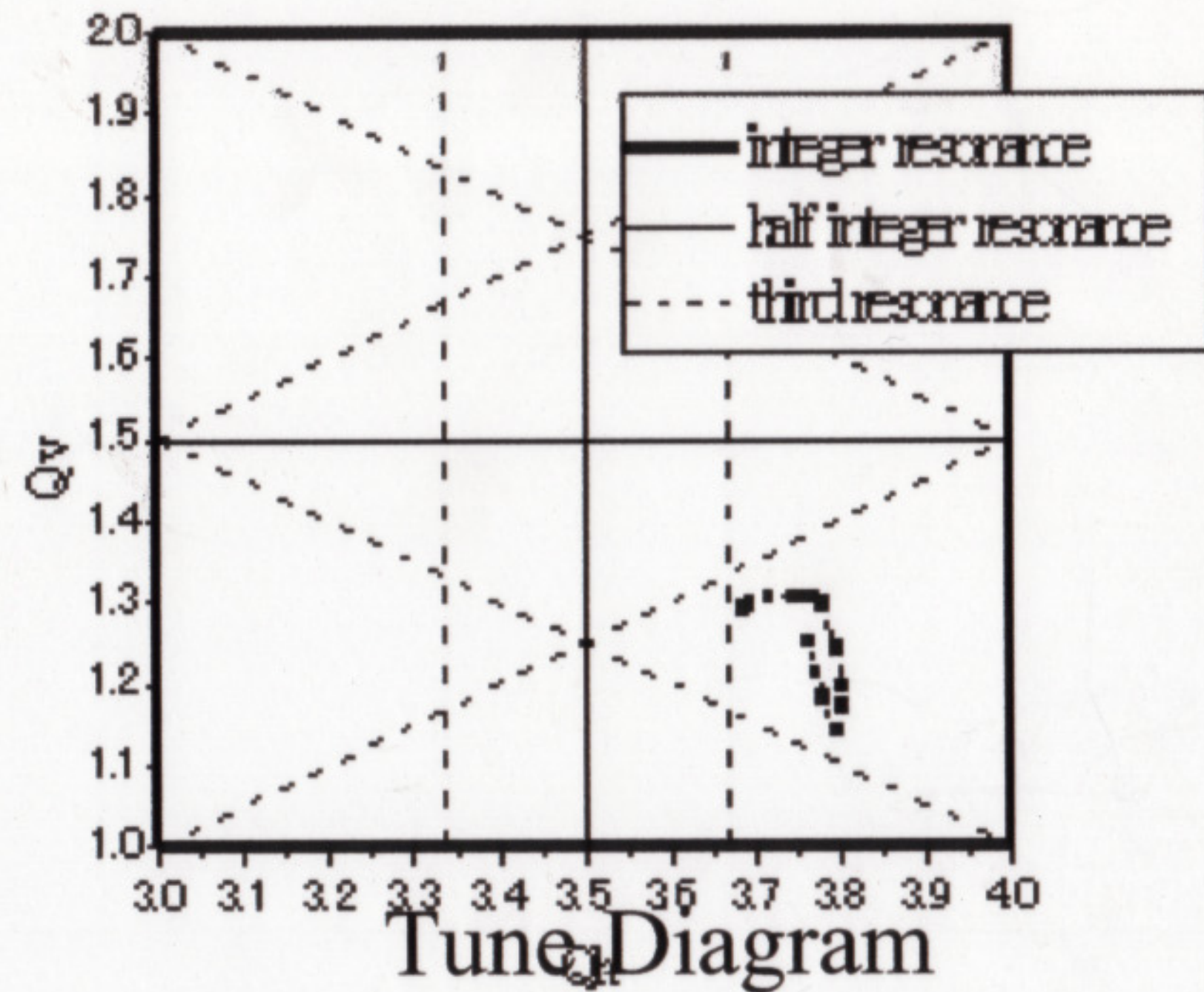
- Space for the extraction

# 150MeV FFAG — Designe parameters

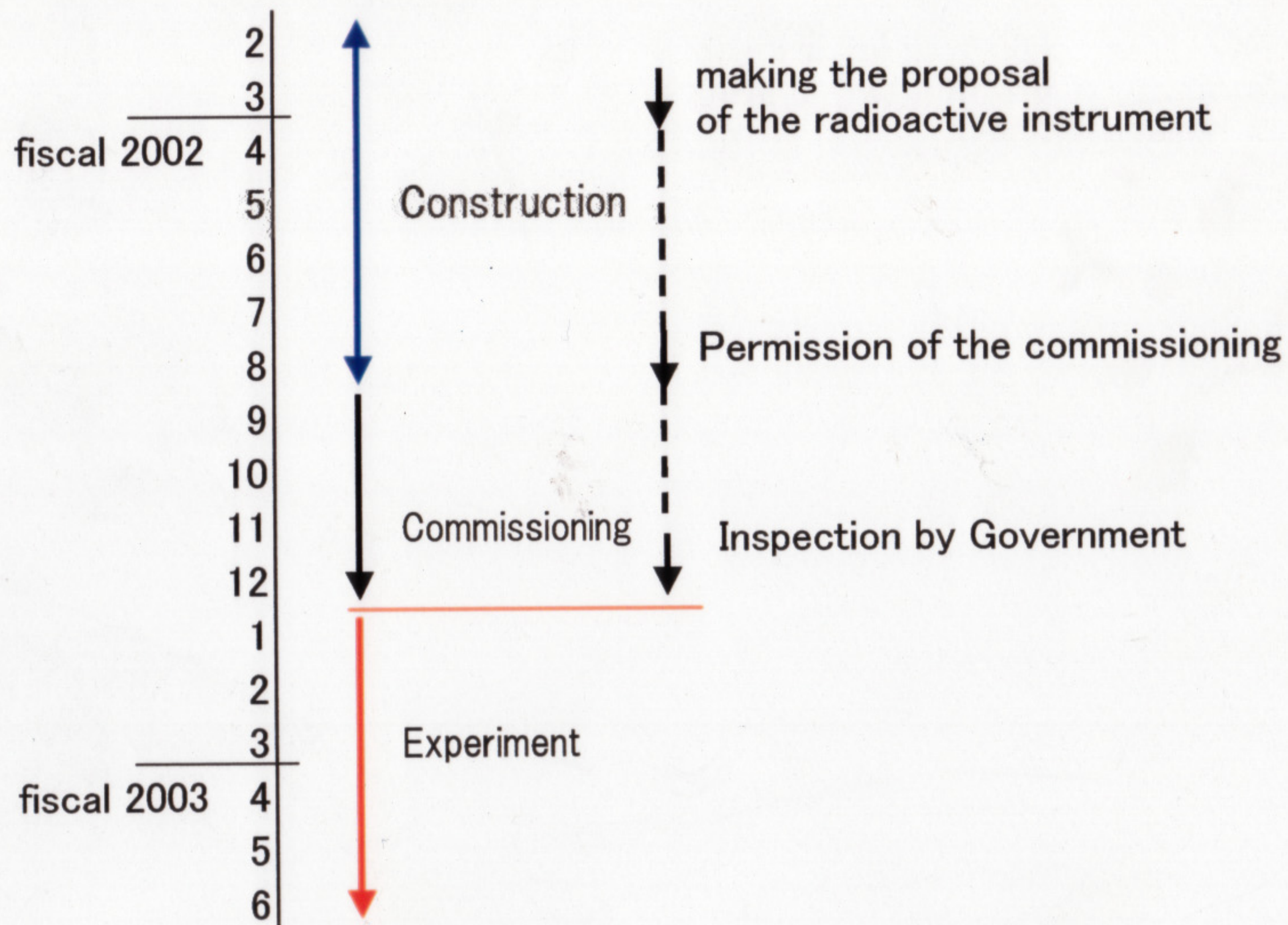
## Parameters

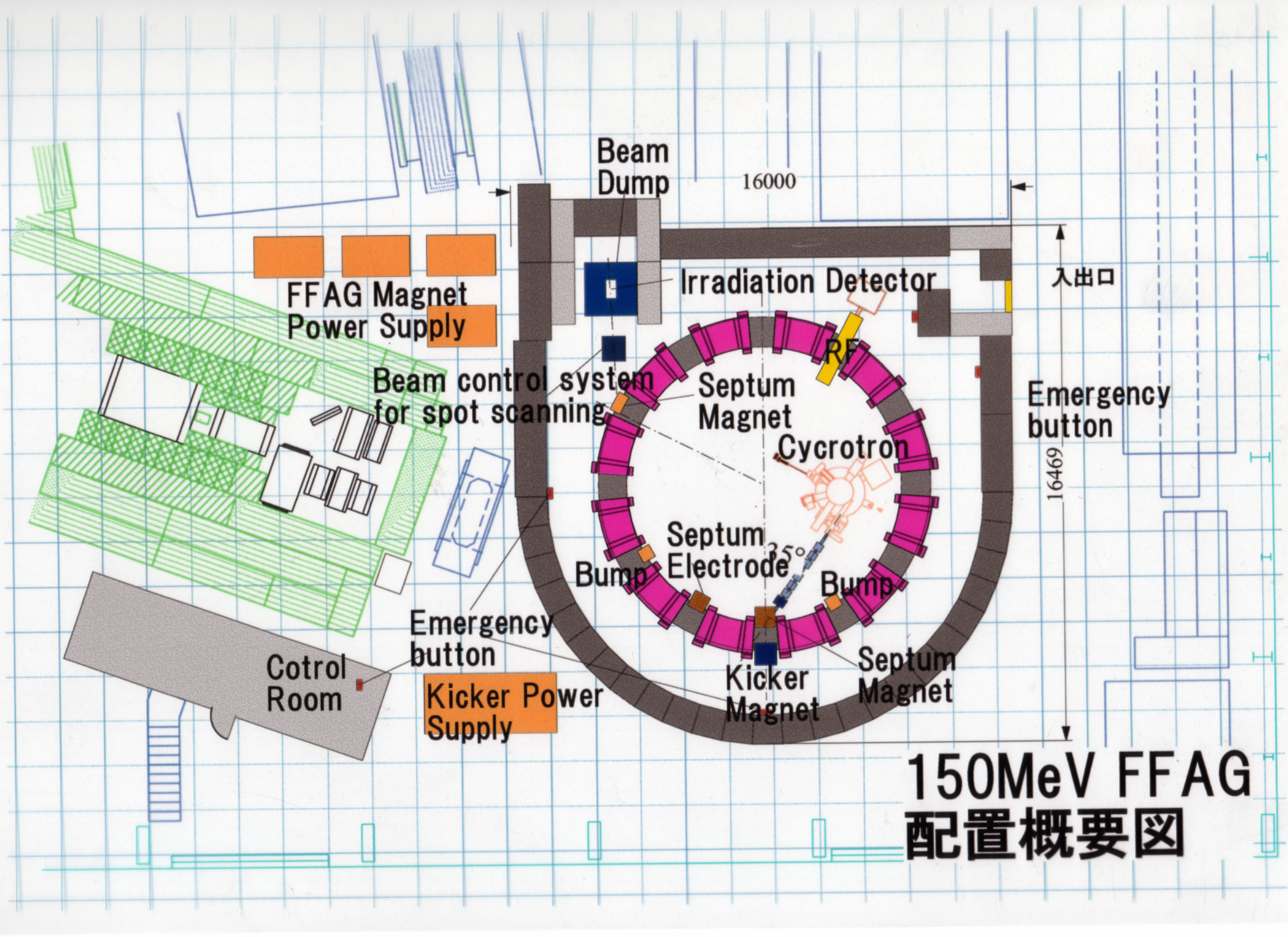
energy : 12MeV=>150MeV  
field F : 0.34-1.63T  
D : 0.15-0.78T  
tune h : 3.69-3.8  
v : 1.14-1.3  
field index : 7.6  
mean radius : 4.47-5.2m  
rapetition rate: 250Hz  
Revolution Freq. : 1.7Mhz-4.6Mhz  
Current : 15 nA(\*)

\*; in the proposal to Goverment



# 150 MeV FFAG Roadmap





Beam Dump

16000

入出口

FFAG Magnet Power Supply

Irradiation Detector

Beam control system for spot scanning

Septum Magnet

RF

Emergency button

Cycrotron

16469

Septum Electrode

Bump

Bump

Control Room

Emergency button

Kicker Power Supply

Kicker Magnet

Septum Magnet

150MeV FFAG  
配置概要図