

# Accelerators of the Central Japan Synchrotron Radiation Facility Project

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## Abstract

The construction of Central Japan Synchrotron Radiation Facility has started at Aichi, Japan and the service will start in 2012. The facility is designed to be used not only for basic research, but also for engineering and industry-oriented research and development.

### History & Future

1991	Proposal of SR facility at Nagoya Univ.
2007	Inauguration of NUSR
2008	Collaboration with Aichi prefecture, industries and research institutions
2009	Budget acquisition
Dec. 2009	Order-agreement for the accels.
April 2010	Groundbreaking ceremony
2010	
Middle	Building construction (~2011)
2012	
Beginning	Commissioning of accelerators
Middle	Service starts

Aichi Science & Technology Foundation is responsible for operation and management and NUSR is responsible to run the equipments and support the users technically and scientifically.

### Key equipments

- X-ray generation from Superbends
- Full energy booster for Top-up operation

### Superbend (superconducting magnet)

The main pole is directly cooled by 2-stage 4K-GM cryocooler, and liquid helium is not used during normal operation or maintenance. The cryocooler has a cooling capacity of 1.5 W at 4.2 K and 45 W at 50 K. To decrease leak fields, two field clamps are equipped at outside of coil and iron core.

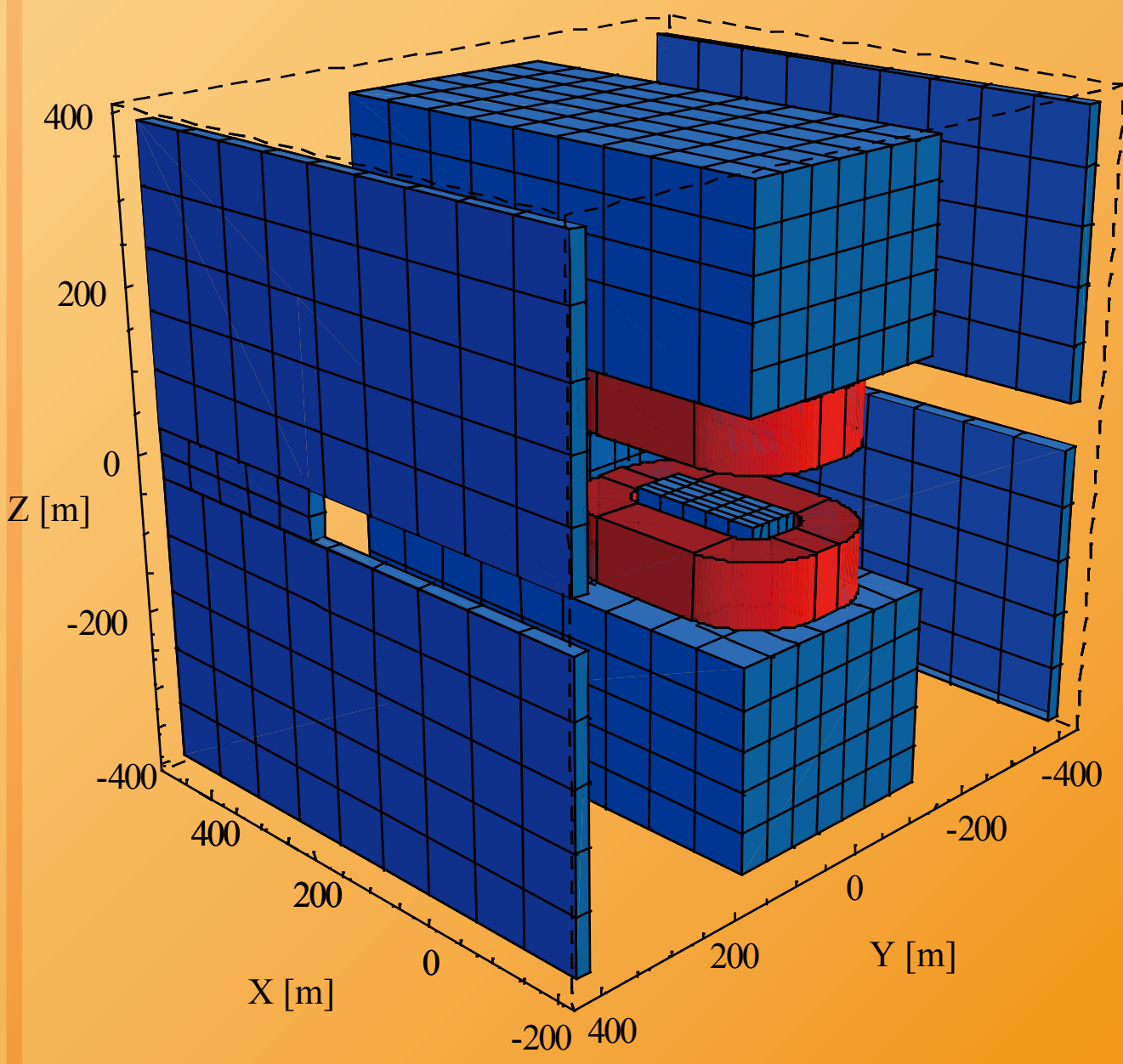


Fig.1. Calculation model of the superbend

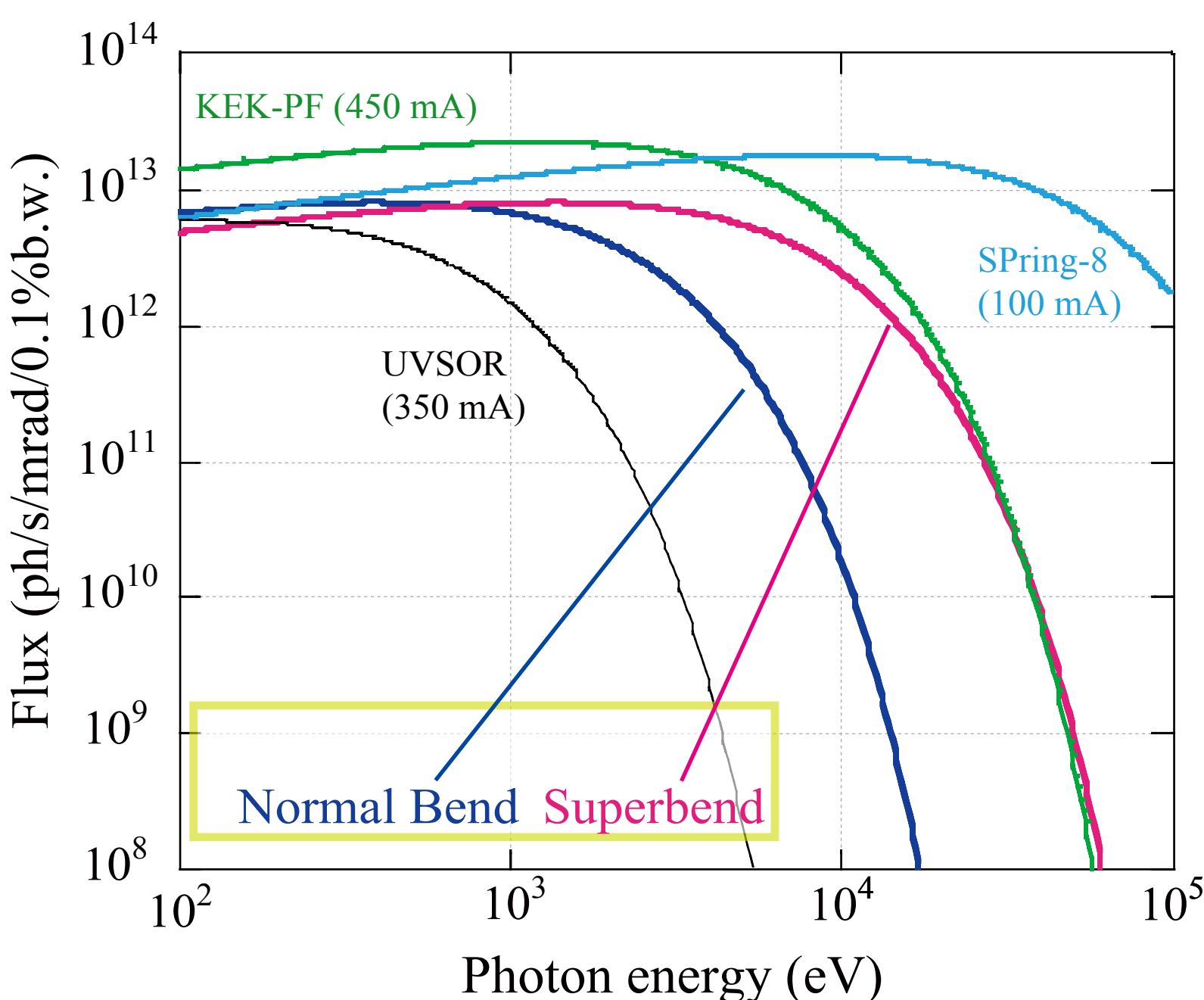


Fig.3. Spectra of photon flux from BMs

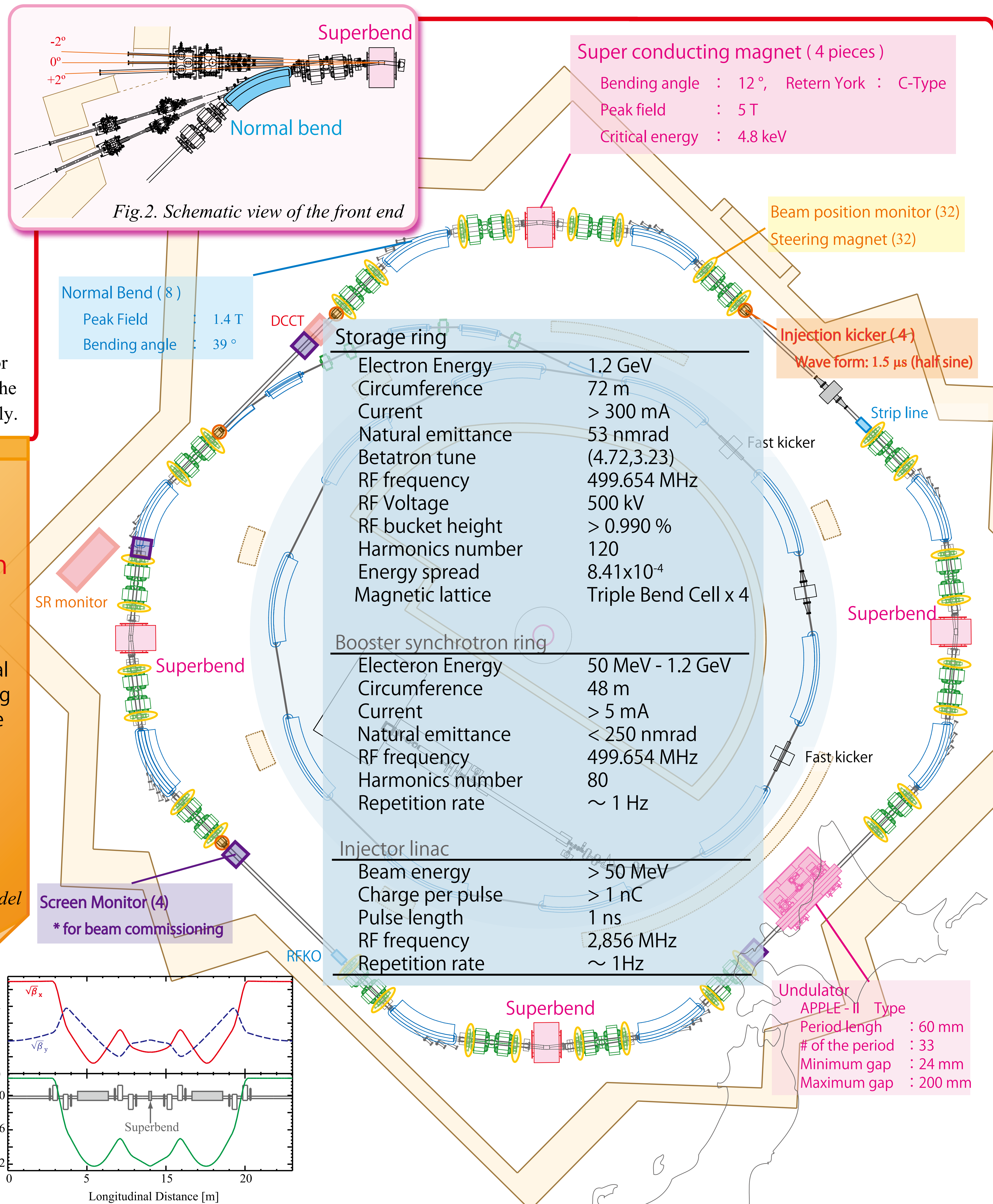


Fig.2. Schematic view of the front end

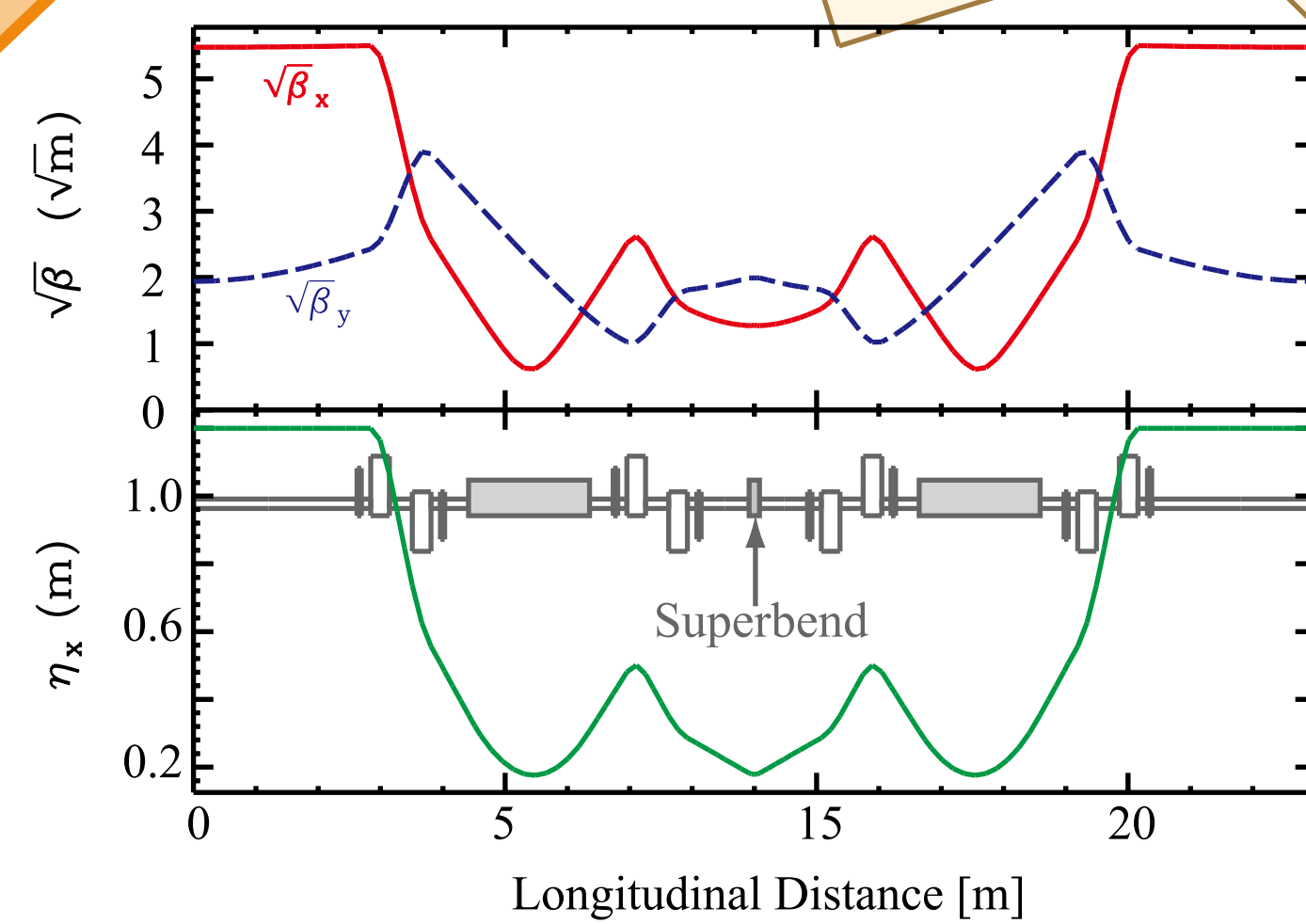


Fig.4. Optical functions of the storage ring

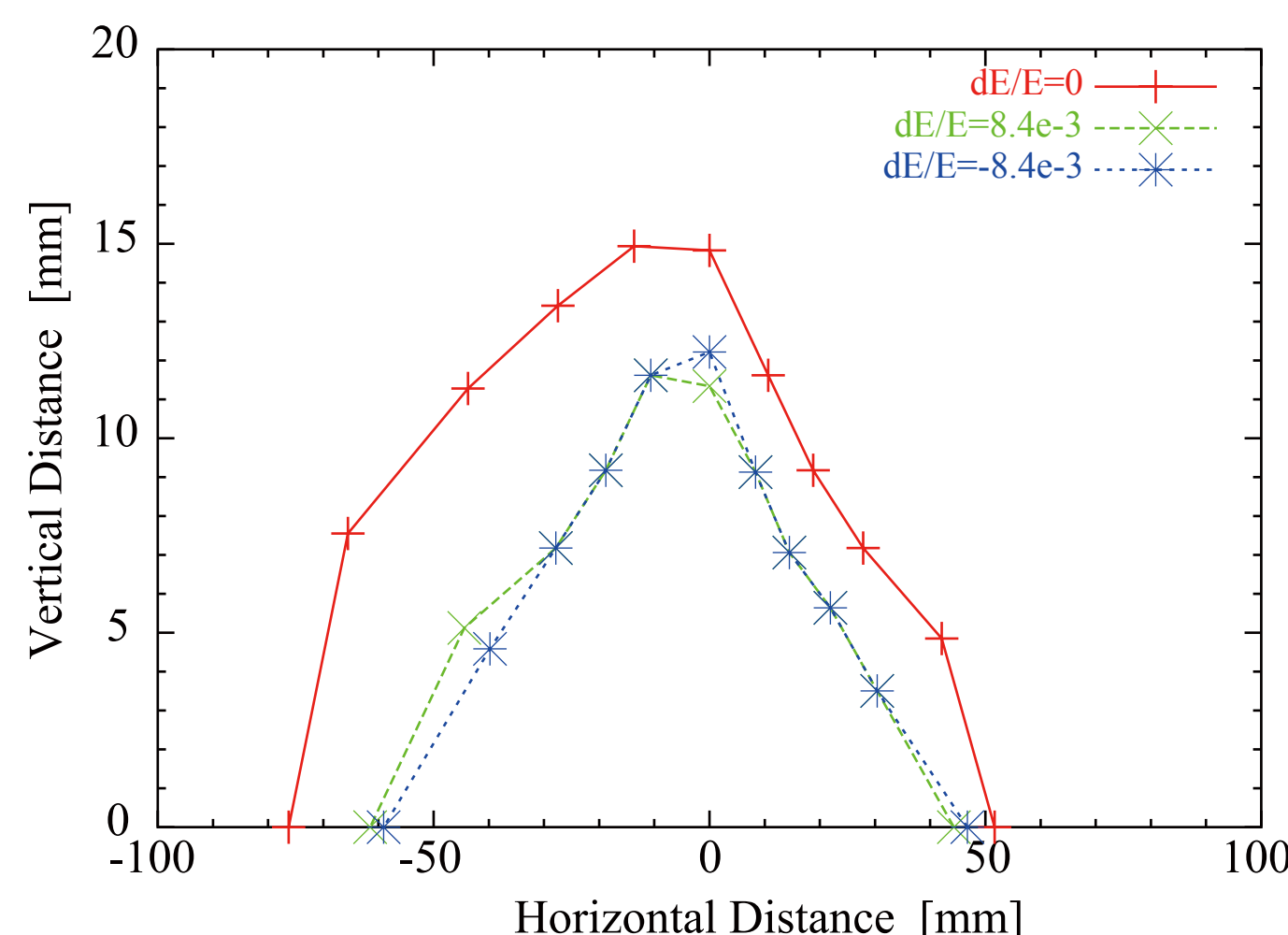


Fig.5. Dynamic Apertures of the storage ring

