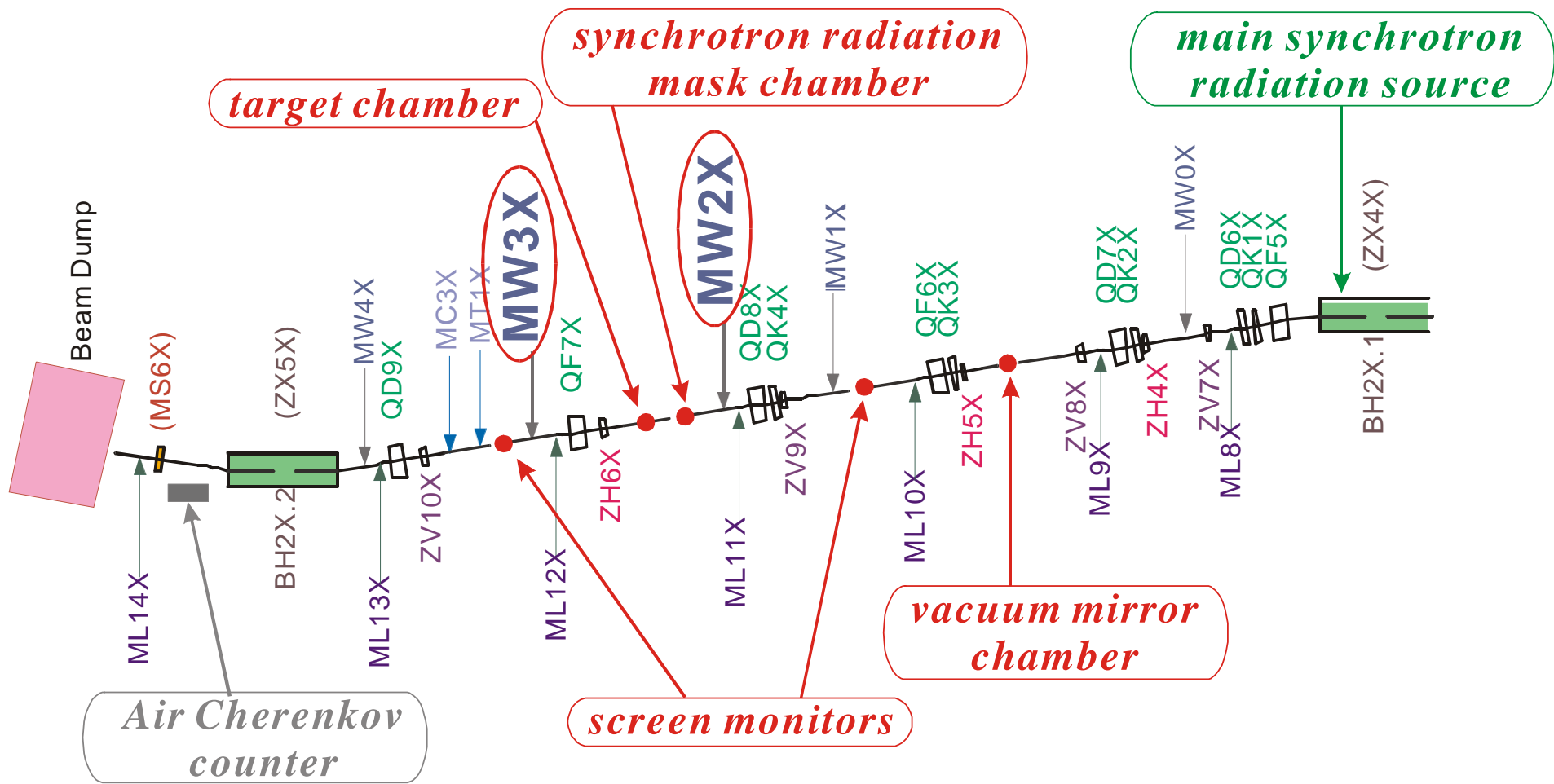


# Optical Diffraction Radiation monitor

(purpose and achievements)

The purpose is to measure  $10\mu\text{m}$  beam size for a single shot

- **Investigated basic diffraction radiation characteristics**
  - single edge target
  - slit target
  - pre-wave zone effect
- **Solved a lot of problems**
  - Synchrotron radiation contribution
  - Target quality
  - pre-wave zone effect suppression
- **Achieved sensitivity to  $14\mu\text{m}$  beam size**
  - achieved with a photomultiplier



# Optical Diffraction Radiation monitor

(experimental plan until June 2007)

- **apply the ODR monitor for single shot beam size diagnostics (using cooled CCD camera)**
  - additional DAQ software is necessary to develop in order to obtain beam position information from the same pulse
- **perform systematic beam size measurements with ODR monitor**
  - test the reliability of the monitor
  - check correlations with BPMs, currents
- **investigation of the focusing characteristics of a concave ODR target**
  - reduction of the pre-wave zone effect and
  - application for THz radiation generation for longitudinal bunch profile diagnostics