

Preliminary IP Chamber Design

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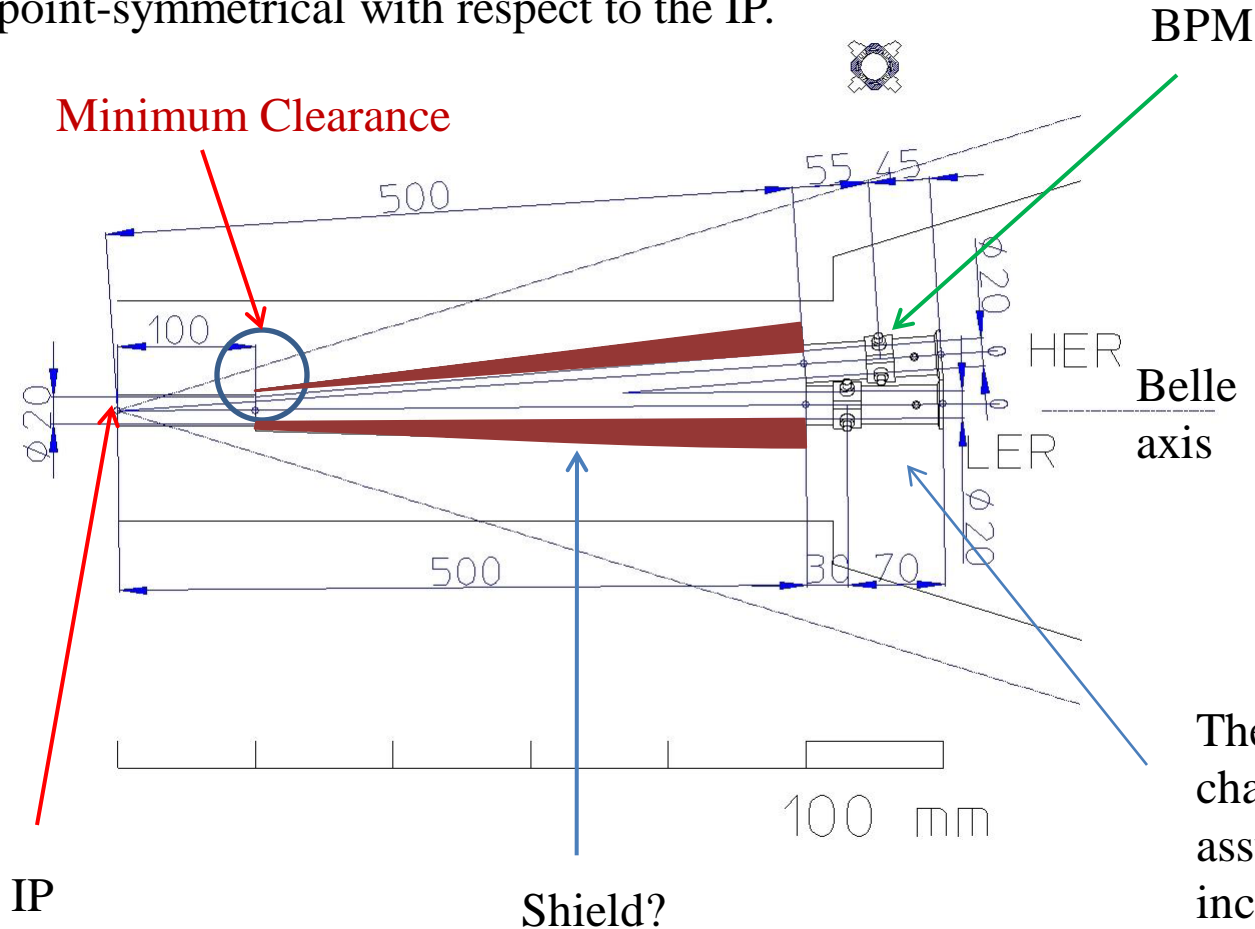
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Design Features

- LER beam (incoming): 7.46 mrad with respect to the Belle solenoid axis.
- HER beam (outgoing): 67.46 mrad with respect to the Belle solenoid axis.
- ϕ 20 mm x l 200 mm straight pipe parallel to the Belle solenoid axis at IP.
- With beam position monitors (BPM)
- ISO-KF-like flange.
- Avoid cavity-like structure at IP.

Preliminary Drawing

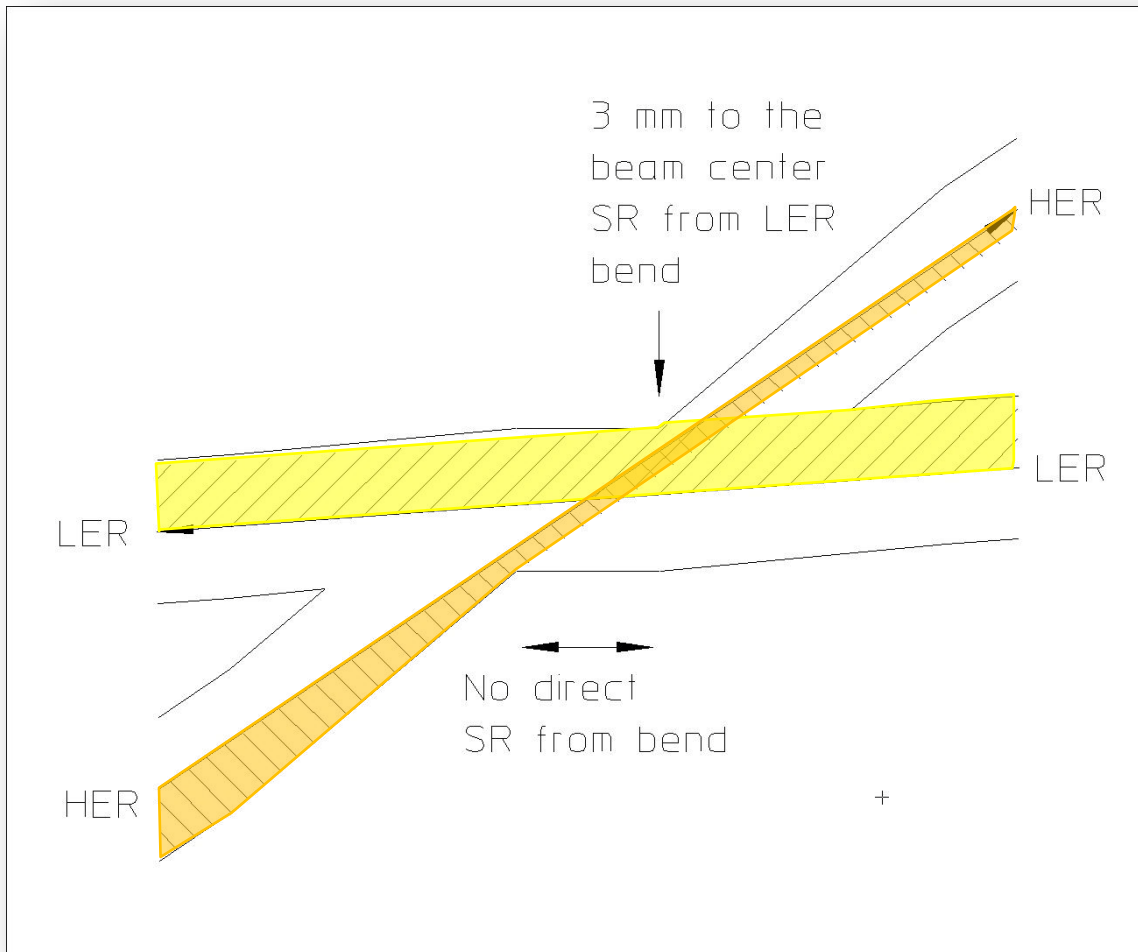
Half of the chamber. The other part is point-symmetrical with respect to the IP.



The minimum distance between the beam pipe wall and the high energy beam is ~ 3 mm ($\sim 5A_x$).

The thickness of the chamber wall is assumed to be 4mm to incorporate a water channel.

SR from the last bend



No direct synchrotron radiation from the last bend on the central part.

Summary

- Based on the recent optics, a preliminary design of IP chamber is attempted.
- The chamber has,
 - ϕ 20 mm x l 200 mm central straight pipe parallel to the Belle solenoid axis,
 - Beam position monitors.
- In this design,
 - The minimum distance between the beam pipe wall and the high energy beam is ~ 3 mm ($\sim 5A_x$).
 - No direct synchrotron radiation from the last bend on the central part.