The LHCb upgrade will take place in 2018: higher luminosity \(2 \times 10^{33} \text{ cm}^{-2}\text{s}^{-1}\)

New photon detectors to be installed, different candidates tested:

- **R11265** (Hamamatsu 1” MaPMT 64-channels): baseline for RICH1 and central part of RICH2
- **H12700** (Hamamatsu 2” MaPMT 64-channels): candidate for peripheral region of RICH2

Magnetic fields can cause loss of gain and photo-detection efficiency

Two designs of \(\mu\)-metal shields have been tested:

**Results**

- longitudinal field: similar performance, efficiency \(\geq 90\%
- transverse field: slightly better performance of full shield, efficiency \(\geq 95\%)