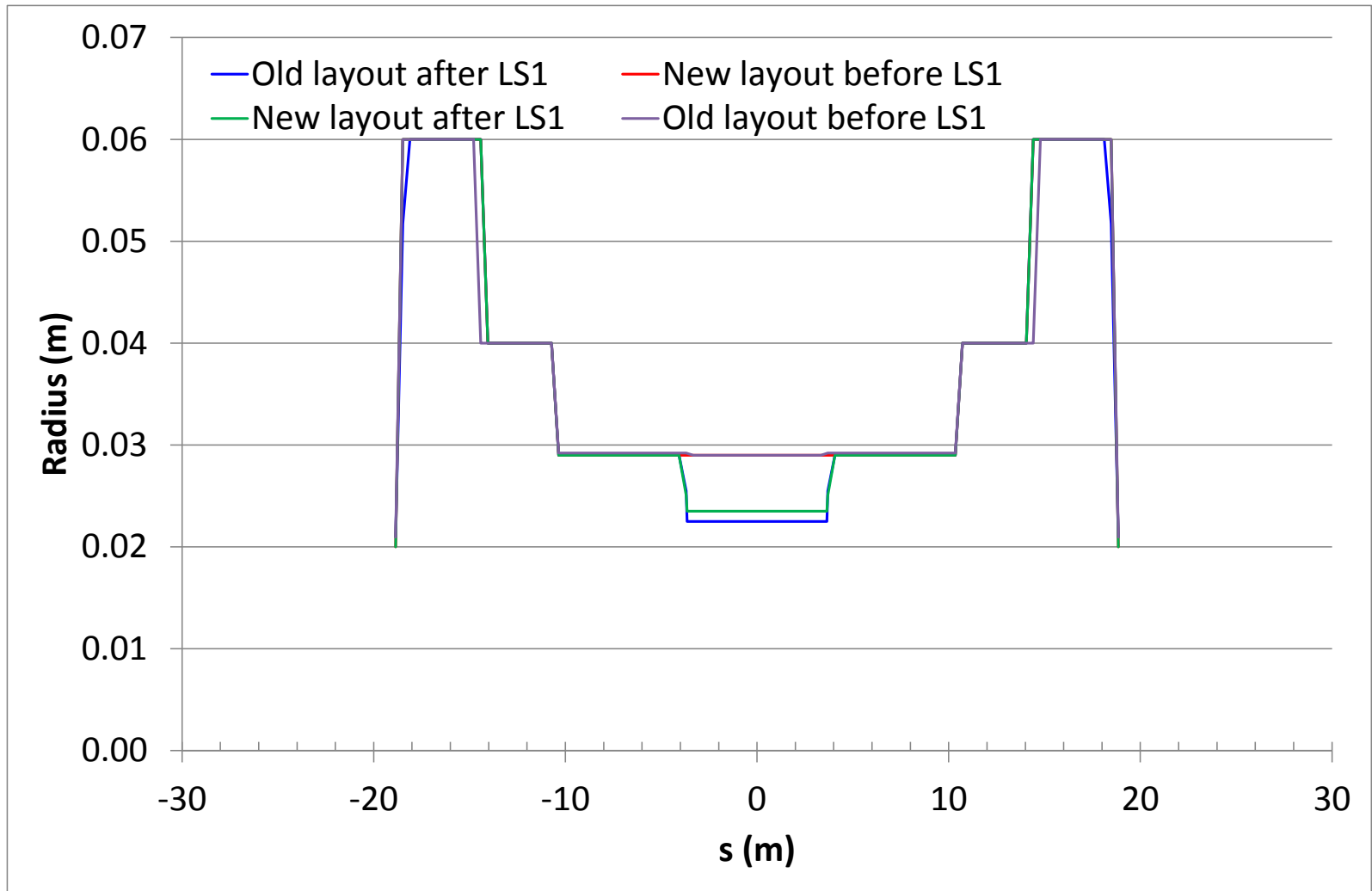# New layout files for ATLAS and CMS experimental beam pipes

M. Giovannozzi (with contribution from M. A. Gallilee)
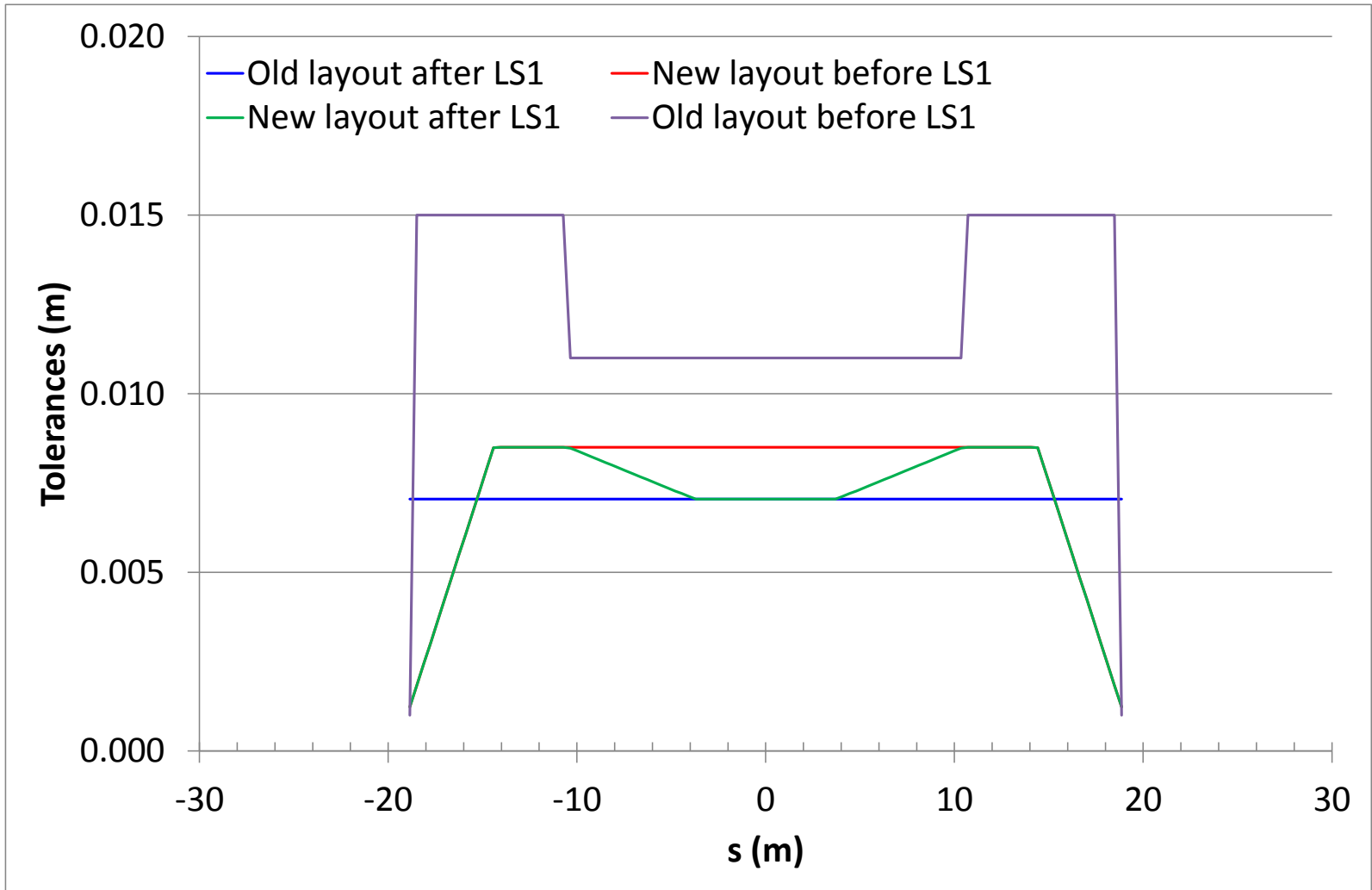
ATLAS beam pipe

- Some explanations:
  1. Old layout before LS1: nominal layout based on data provided by A. Rossi.
  2. New layout before LS1: certified (by M. A. Gallilee) nominal layout.
  3. Old layout after LS1: certified (by M. A. Gallilee) proposed layout.
  4. New layout after LS1: certified (by M. A. Gallilee)
- Differences between 1. and 2. are very small and irrelevant for aperture.
- Differences between 3. and 4. are due to a revision of the central pipe radius.
- S-dependent tolerances have been introduced.
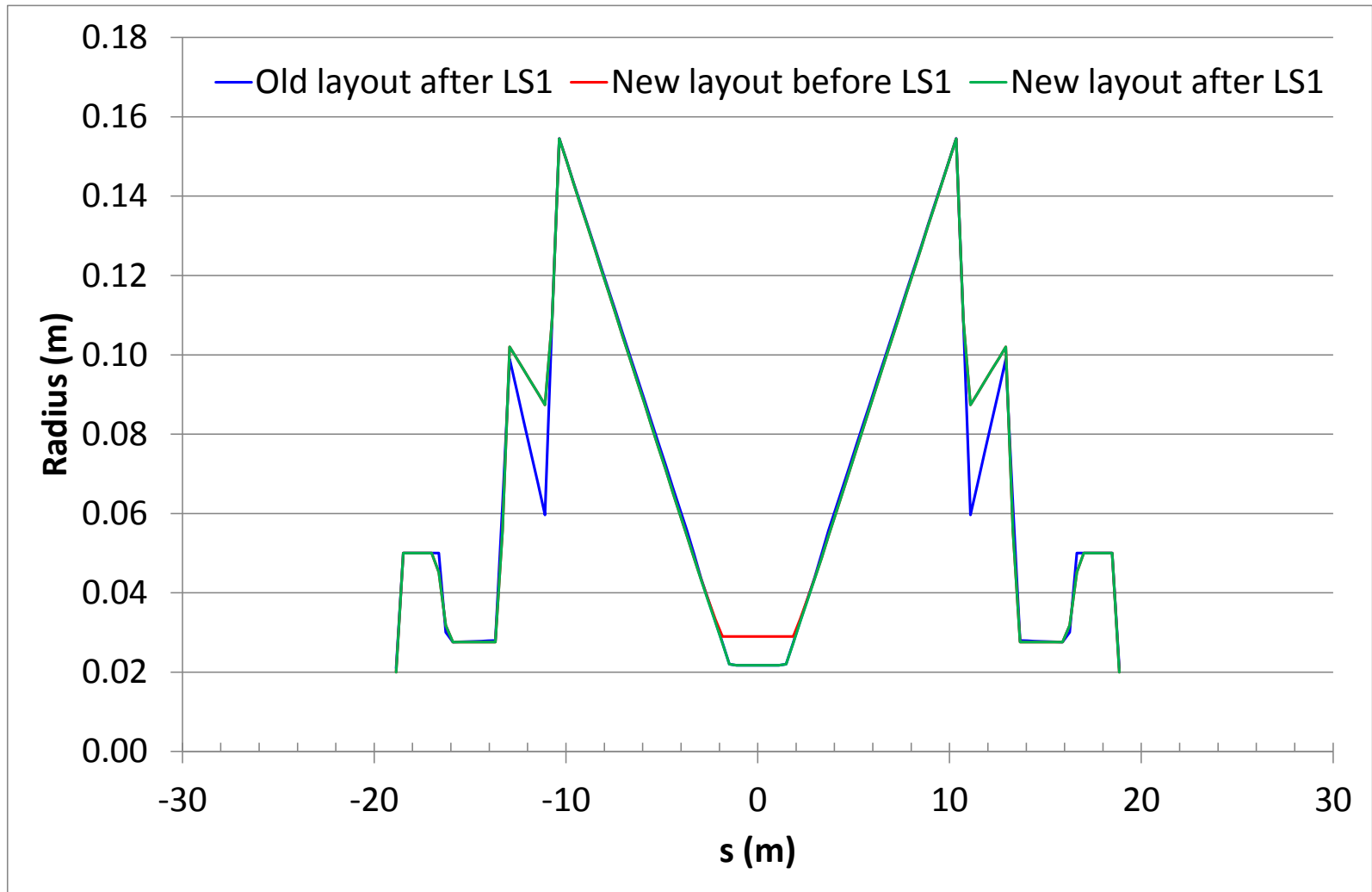
ATLAS beam pipe layout
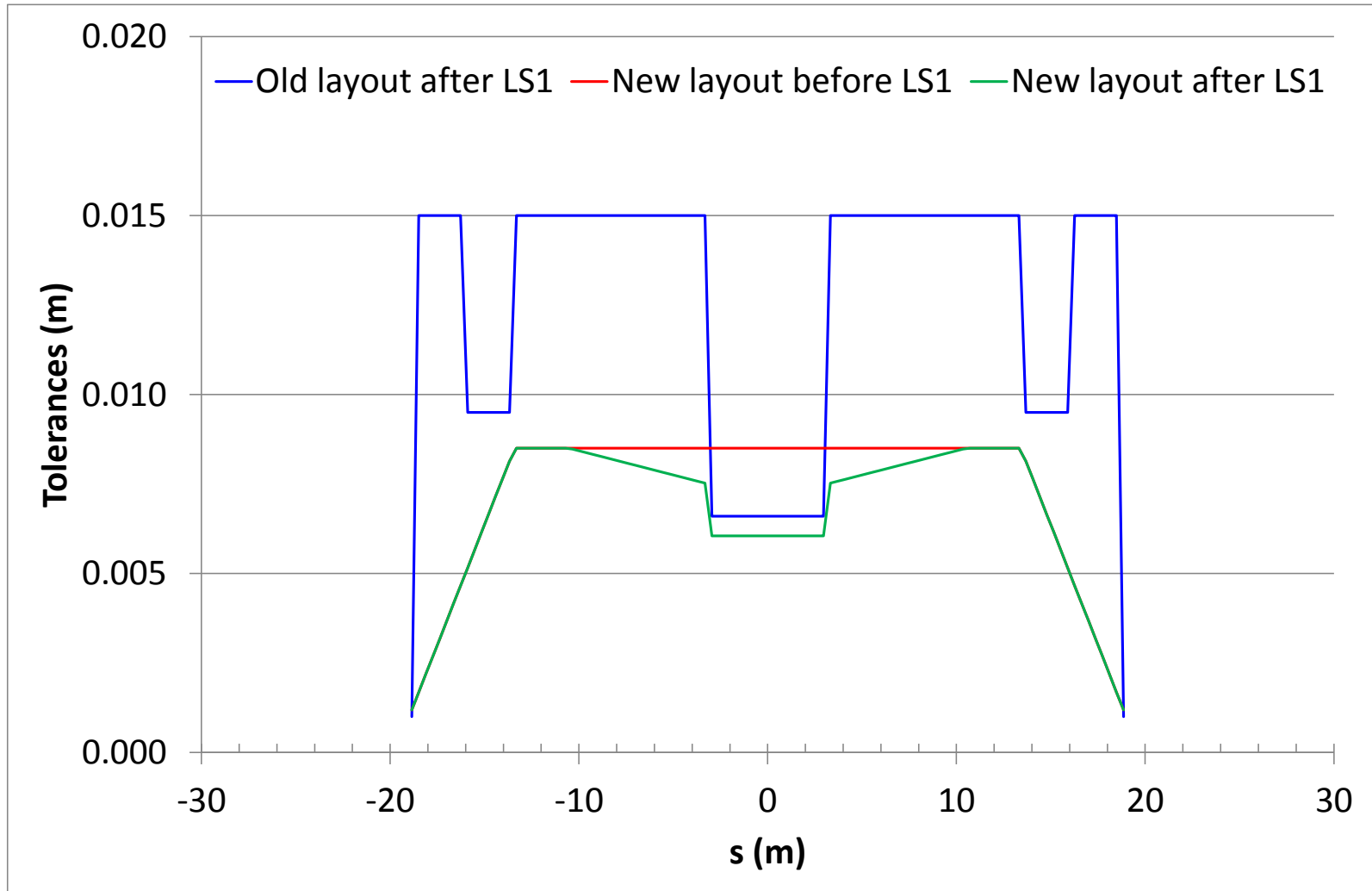
ATLAS beam pipe tolerances

CMS beam pipe

- Some explanations:
  1. Old layout before LS1: nominal layout based on data provided by A. Rossi.
  2. New layout before LS1: certified (by M. A. Gallilee) nominal layout.
  3. New layout after LS1: certified (by M. A. Gallilee) proposed layout.

- Differences between 1. and 2. are irrelevant for aperture (in areas where aperture is large anyway).

- S-dependent tolerances have been introduced.

CMS beam pipe layout

CMS beam pipe tolerances

Final words

- The files with the new layout are stored:
  - Revised layout before LS1, i.e., nominal layout -> under /afs/cern.ch/eng/lhc/optics/V6.503/aperture
  - Revised layout after LS1, i.e., proposed and certified layout discussed at LEB -> under /afs/cern.ch/eng/lhc/optics/V6.503/aperture/as-built