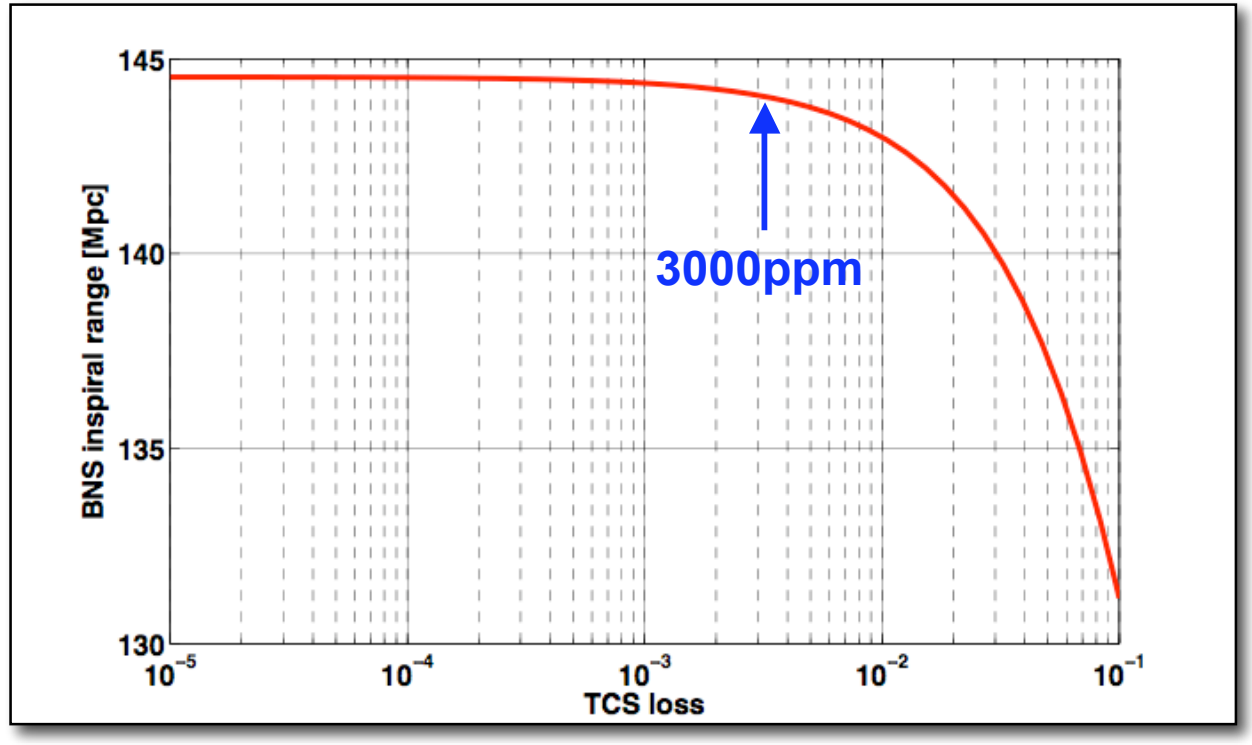
SRC and TCS 'Losses' in GWINC

- A summary of how the implemetation in GWINC works can be found on the OSD wiki: https://workarea.ego-gw.it/ego2/virgo/advanced-virgo/osd/implementation-of-tcs-and-astigmatism-losses-into-gwinc
- There are three parameters involved:
  - ifo.TCS.SRCloss = coupling loss from arm cavity mode to SRC mode due not perfectly compensated thermal distorsions
  - ifo.Optics.coupling = coupling loss from arm cavity mode to SRC mode (no thermal distorsion)
  - ifo.Optics.BSLoss = Losses 'around' the beam splitter: CP-AR, BS-AR, ITM-AR etc
- Mismatch calculates as:

  Mismatch = 1 - ifo.Optics.coupling + ifo.TCS.SRCloss + ifo.Optics.BSLoss
- Mismatch is then used to calculate the effective SRM reflectivity. Then effective SRM reflectivity and overall signal losses plug into the quantum noise formular of GWINC.

TCS coupling losses

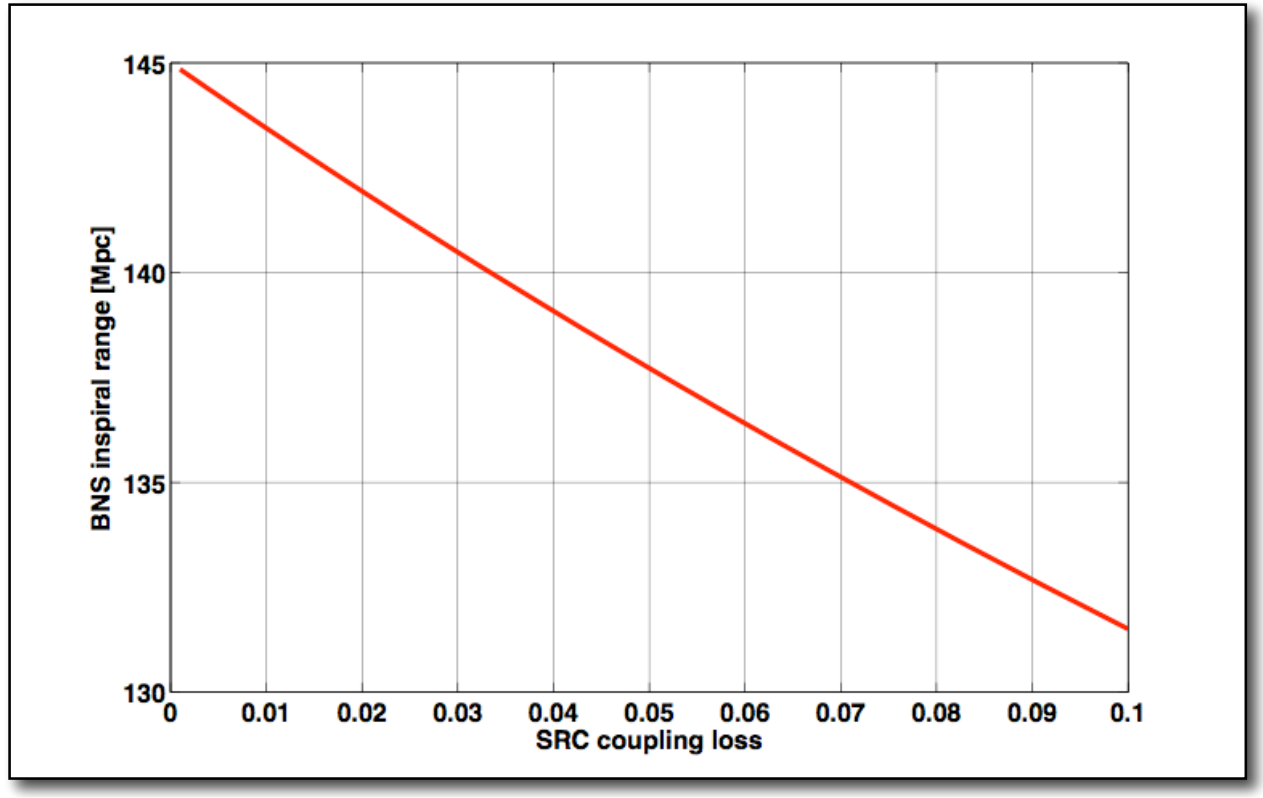
- GWINC variable: ifo.TCS.SRCloss
- Currently used value = 0



For more details see AdV Labbook from 21th of April 2009

SRC coupling losses

- GWINC variable: ifo.Optics.coupling
- Currently used value = 0.997 (equivalent to 0.003 in the plot)



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