



Investigation of polarising optics in space-based laser interferometers

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Laser interferometry will play a key role in the next generation of GRACE-type satellite gravity missions. The measurement concepts for future missions include a heterodyne laser interferometer. Furthermore, it is favourable to use polarising components in the laser interferometer for beam separation. Therefore the influence of these components on the interferometer sensitivity has been investigated and a length stability on a pm-scale has been validated. The design and construction of a quasi-monolithic interferometer for comparing the interferometric performance of non-polarising and polarising optics will be discussed. The results of the interferometric readout of a heterodyne configuration together with polarising optics will be presented.