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## Tilt-to-Length noise in interferometric GWO in presence of wavefront aberrations

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We investigated the tilt-to-length contribution to the measure of the distance of the LISA satellites at the vertexes of the triangular constellation [1]. The aberrations of the beam wavefront have been introduced using Zernike polynomials. This greatly limited the spatial frequency of the considered aberrations and the study of local defects due to the optics traversed by the measuring beam. In this study, we extended the bandwidth of the spectra of the wavefront aberrations using a discrete Fourier decomposition. The numerical and analytical analyses have shown that to keep the tilt-to-length error below 10 pm for an angle jitter of 10 nrad and a point-ahead angle less than 1  $\mu\text{rad}$  (as for the requirements of the LISA mission), the wavefront quality must be better than  $\lambda/20$ .

[1] C P Sasso et al 2018 Class. Quantum Grav. 35 245002

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