

Overview and perspectives of Active and Adaptive Optics for Space Optical Applications

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Abstract content
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The increasing need for higher resolution for space optical applications has prompted the study of technologies aimed at improving imaging performance beyond what is currently achievable by classical optical systems.

Active Optics and Adaptive Optics are very promising examples of such technologies, potentially allowing to counter in-flight effects (such as thermo-elastic deformations, radiation effects on optical materials, micro-vibrations...) which impact the optical quality of space instruments. They can also potentially decrease the manufacturing complexity of optical component and reduce the outage rate of missions (due e.g. to Sun baffle intrusions or eclipses altering the thermal conditions within the instrument).

This paper gives an overview of the current state-of-the-art of Active/Adaptive Optics developments for Space Applications. It details as well the constraints that such systems would encounter during a Space mission and lists effects affecting image quality that Active/Adaptive Optics could help reduce.

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