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The SPLATT project, or investigating adaptive optics for future space telescopes.

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Active/adaptive optics is considered a key technology for future large aperture space telescopes. The sensing and active correction of the telescope optics allows reducing tolerances, risks and costs, while meeting the wavefront requirements for high contrast.

At INAF, the expertise matured during the development and testing of large format adaptive mirrors (e.g. LBT, VLT, M4) has been successfully transferred to space active optics during the LATT activities, which was an ESA technological research project with the goal to demonstrate a 40 cm diameter active primary controlled by 19 voice coil actuators. Recently, a follow-up has been proposed and funded with a TECNO-PRIN INAF. The new SPLATT project aims at investigating two main aspects in the context of space active optics: as first, the rejection of the external disturbances, offered "for free" by voice coil, contactless, actuators; secondarily, the sensitivity of a pyramid Wavefront sensor to achieve sub-nanometer correction stability for high contrast. In the talk I will present the main concepts behind the project and the outputs of the laboratory and simulation activities in Arcetri.

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