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## **PASSATA and TIPTOP: simulation tools for Adaptive Optics systems in ADONI**

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In this work we present the status of two simulation tools for Adaptive Optics systems: PASSATA and TIPTOP. These tools have been developed mainly at Arcetri observatory and they are able to simulate a wide variety of systems. PASSATA (PyrAmid Simulator Software for Adaptive opTics Arcetri) is an IDL and CUDA based library capable of doing Monte-Carlo end-to-end simulations. It is currently used to simulate LBT SOUL, VLT ERIS and MAVIS, ELT MAORY and CaNaPy/ALASCA. TIPTOP is an analytical simulator that exploits simplifications given by the Fourier domain. It has been developed in Python by a collaboration between Laboratoire d'Astrophysique de Marseille (LAM) and INAF. TIPTOP is an early stage of development but its goals are high: integrating in the Exposure Time Calculators (ETC) for ELT instruments and VLT MAVIS, supporting observers in the choice of the Natural Guide Star asterism and working in PSF reconstruction pipelines.

**Primary authors:** AGAPITO, Guido (Istituto Nazionale di Astrofisica (INAF)); PLANTET, Cedric Antoine Adrien Gabriel (Istituto Nazionale di Astrofisica (INAF)); PUGLISI, Alfio Timothy (Istituto Nazionale di Astrofisica (INAF)); ROSSI, Fabio (Istituto Nazionale di Astrofisica (INAF))

**Presenter:** AGAPITO, Guido (Istituto Nazionale di Astrofisica (INAF))

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