ID de Contribution: **18**   Type: **Présentation orale 15 min.**

LISANode: An end-to-end simulator design using graphs and nodes

mardi 2 octobre 2018 09:00 (15 minutes)

I will present the design of LISANode, a prototype end-to-end simulator for the LISA space mission.

The LISA mission is an ESA mission designed to detect gravitational waves produced by astrophysical and cosmological sources.

The purpose of LISANode is to provide a detailed and modular simulation of the instrument and of time-delay interferometry, which is a crucial pre-processing step.

The originality of LISANode is that any simulation design can be coded by connecting unit nodes into a simulation graph with an easy-to-use Python toolbox. The same toolbox analyzes the graphs for consistency and produces a c++ executable which is run on the fly. LISANode therefore combines the user-friendliness of Python with the efficiency of c++. The graph design allows for easy evolution of the simulator since rudimentary complex nodes can easily be substituted by more realistic complex nodes that reflect the true complexity of instrumental sub-systems.

Thèmes associés

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Classification de Session: Présentations plénières

Classification de thématique: DEV