47th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The Next Steps (A4)
SETI 1: SETI Science and Technology (1)

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LOW COST SETI DATA MULTI-PROCESSING. S.MONTEBUGNOLI

Abstract

The state of the art of technology, makes possible today the design for efficient and inexpensive data acquisition and processing system for SETI activities. Very fast multi-core commercial PC can host and exploit many types of high performances data computing boards, to set up a parallel data processing system. Up to now, the major part of SETI searches have been based on high resolution spectrum analysis computation, looking for extremely narrow signals. Since we really do not know if ET is spreading to space a modulated radio signal for communication and in which mode these are modulated, we plan to parallelise some data processing blocks. Each of these concurrently implement different algorithm for different signal extraction from noise in order to increase the detection probability. The following tasks are planned to be implemented in the parallel blocks: multimillion complex points FFT, low resolution spectrum analysis, implementation of Duffing oscillator to test its detection efficiency, test for agnostic entropy and finally the KLT (Kharunen Lowe Transform) computation. The low cost multiprocessing approach, can trace new path in the data post- processing for SETI.