

Institut de recherche sur les lois fondamentales de l'univers
SÉMINAIRE

Mardi 20 octobre 11h00

CEA-Saclay Bât 141, salle André Berthelot

Compressed Sensing in Astronomy

We briefly review the concept of Compressed Sensing (CS), the new sampling theory, which is certainly one of the most important discovery in data processing during the last ten years. Indeed, CS provides an alternative to the well-known Shannon sampling theory. Then we will show how some problems in astronomy such interferometric image deconvolution or gammay ray image reconstruction can be handled differently using CS.

Finally, we will show how CS could lead to an elegant and effective way to solve the problem ESA is faced with, for the transmission to the earth of the data collected by PACS, one of the instruments onboard the Herschel spacecraft which will launched in April 2009. We show that CS enables to recover data with a spatial resolution enhanced up to 30 per cent with similar sensitivity compared to the averaging technique proposed by ESA.

Le café sera servi 10 minutes avant

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