

Physics seminar

Tuesday, 19th October 2010 at 16h15

(coffee at 16h00)

Campus Limpertsberg

Room BS 0.03

Simon D.P. Williams

Proudman Oceanographic Laboratory

“GPS coordinate time series analysis”

Many studies have now provided evidence for the presence of time-correlated (or coloured) noise in GPS position time series. It is important to understand the noise content of such data so that realistic uncertainties can be assigned to parameters estimated from them. The assumption that the noise is purely white leads, for example, to grossly underestimated site rate uncertainties. In this talk I will outline the various time series analysis methods that have been used in this field and focus on one method, Maximum Likelihood Estimation (MLE) which is the primary method used in the CATS software package. The various elements required to compute the MLE are discussed and, in particular, ways to speed up the computation are given including using first-differences and the benefits of Toeplitz matrices. Finally a history of MLE analysis of GPS coordinate time series is given together with a discussion on other problems encountered in analysis such as the effect of offsets.

Next Physics Seminars

- **Tuesday, 2d November :**
in Belval , 16:15 **Ulrich MÜLLER, Post-doc at the Laboratory of Physics and Material Research**
“Temperature modulated refractometry: a novel access to structural evolution in isotropic media”
- **Tuesday, 16th November :**
at Limpertsberg, 16:15 **Dr. Rosalind Allen, the University of Edinburg**
“Modelling the growth of bacterial populations in changing environments”

- **Tuesday, 30th November :** speaker and topic will be announced shortly
in Belval, 16:15
- **Tuesday, 14th December :** speaker and topic will be announced shortly
at Limpertsberg, 16:15