



Universidade do Minho



Curricular Unit

Advanced Physics Topics 1

Module

Time-domain Astronomy (15 hrs TP)

Type

Lecture course

Contact hours

15

Professor/Researcher in charge

Tiago Campante (CAUP)

Summary of Contents

To provide the student with the basic concepts and methodology relevant to the field of time-domain astronomy.

Time series in Astronomy. Concepts of time series analysis. Time-domain analysis of evenly/unevenly spaced data. Spectral analysis of evenly/unevenly spaced data. State-space modeling. Nonstationary time series. Long-memory processes. Multivariate time series

References

Feigelson, E. D. & Babu, G. J; Modern Statistical Methods for Astronomy with R applications, Cambridge University Press, 2012
Cowpertwait, P. S. P. & Metcalfe, A. V.; Introductory Time Series with R, Springer, 2006
Shumway, R. H. & Stoffer, D. S. ; Time Series Analysis and Its Applications with R Examples, Springer, 2006

Evaluation

Written exam (65%), and report (35%).

Juri

Tiago Campante