
天文学特別講義VII Special Lecture VII

科目コード(Course Number) 20DASf16
物理科学研究科 School of Physical Sciences 天文科学専攻
Department of Astronomical Science 共通 Common
学年(Recommended Grade) 1年 2年 3年 4年 5年
1単位(credit) 前学期 1st semester
VERLEY, Simon

〔授業の概要 Outline〕

Instructor: S. Verley (University of Granada, Spain).

The main goal is to get familiarised with the Python programming language, know some libraries widely used in astrophysics and apply this knowledge to your own needs.

After a brief introduction to the Python programming language, some packages used in astro-physics will be presented and some specific pipelines will be developed.

Theoretical concepts about astrophysics will be reviewed as well as some programming concepts particular to Python in order to apply them efficiently during the practical training.

〔教育目標・目的 Aim〕

1. Installation (Python 3 through miniconda, anaconda).
2. Jupyter-notebook interface (code and markdown cells).
3. Python basics (compounds, control flow, functions).
4. Plotting arrays (numpy and matplotlib libraries).
5. Working with astronomical images (FITS within astropy).
6. Reduction pipeline for photometric data (partly based on photutils).

〔成績評価 Grading criteria〕

Attendance, participation, and homework will be taken into account.

〔授業計画 Lecture plan〕

Lesson 1 Th. 17 May, 2018 13h15 - 14h45

Lesson 2 Fri. 18 May, 2018 13h15 - 14h45

Lesson 3 Th. 24 May, 2018 13h15 - 14h45

Lesson 4 Fri. 25 May, 2018 13h15 - 14h45

Lesson 5 Th. 31 May, 2018 13h15 - 14h45

Lesson 6 Fri. 1 June, 2018 13h15 - 14h45

〔実施場所 Location〕

Mitaka

〔使用言語 Language〕

English

〔教科書・参考図書 Textbooks and references〕

<https://docs.python.org/3/tutorial/index.html>

<https://docs.scipy.org/doc/numpy-dev/user/quickstart.html>

<https://matplotlib.org/>

<http://www.astropy.org/>

<http://photutils.readthedocs.io/en/stable/>

〔関連URL Related URL〕

URL:

〔上記URLの説明 Explanatory Note on above URL〕

〔備考・キーワード Others/Keyword〕

Students attending the course are advised to come with their laptops for the practical training. Python 3 will be used throughout the whole course. After the course, all the material will be made freely available to the students.

Graduate students, PhD students, postdoc fellows, staff scientists are all welcome.

Need preregistration before April 20th.