Course on Galactic Chemical Evolution: Developments and Uptake

WP6 – Comprehensive Nuclear Astrophysics

Kate Womack

University of Hull

ChETEC-INFRA 3rd General Assembly

UNIVERSITY OF HULL

ChETEC INFRA

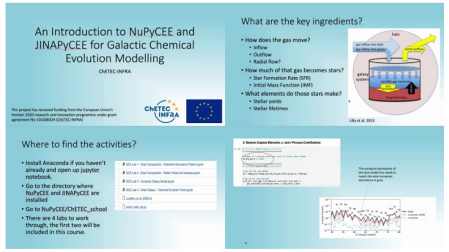
Task 6.3, D6.5

- ‘Report on uptake of web-based training courses’
  - Providing training on the chemical evolution code OMEGA+

Current training available:

1. Online training video
   - Matching the solar abundance pattern
   - Modifying basic parameters of the model
2. In-person training delivered as part of the NPA-X school - September 2022
   - As above
   - How to constrain a GCE model

Galactic Chemical Evolution Modelling

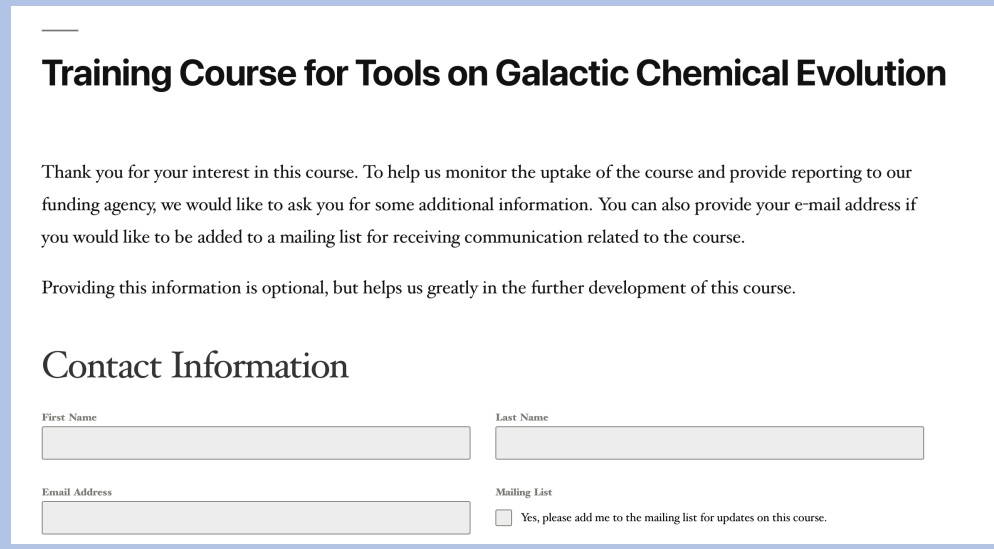


A video course on GCE Modelling with NuPyCEE and JINAPyCEE that guides through the initial setup, and their application in two lab projects.

The course can be found on this page.

Online Feedback

- Entrance and Exit surveys
  - These are optional, you do not need to answer them to access the videos
- We ask:
  - Demographics information (e.g. Contact information, Institution, Career stage, gender)
  - Evaluation questions
    1. How would you rate the course overall?
    2. Would you recommend this course to someone else?
    3. Would you use another course like this in the future?
    4. What did you like about this course?
    5. What about this course could be improved upon?
- We currently have a limited number of respondents



Training Course for Tools on Galactic Chemical Evolution

Thank you for your interest in this course. To help us monitor the uptake of the course and provide reporting to our funding agency, we would like to ask you for some additional information. You can also provide your e-mail address if you would like to be added to a mailing list for receiving communication related to the course.

Providing this information is optional, but helps us greatly in the further development of this course.

Contact Information

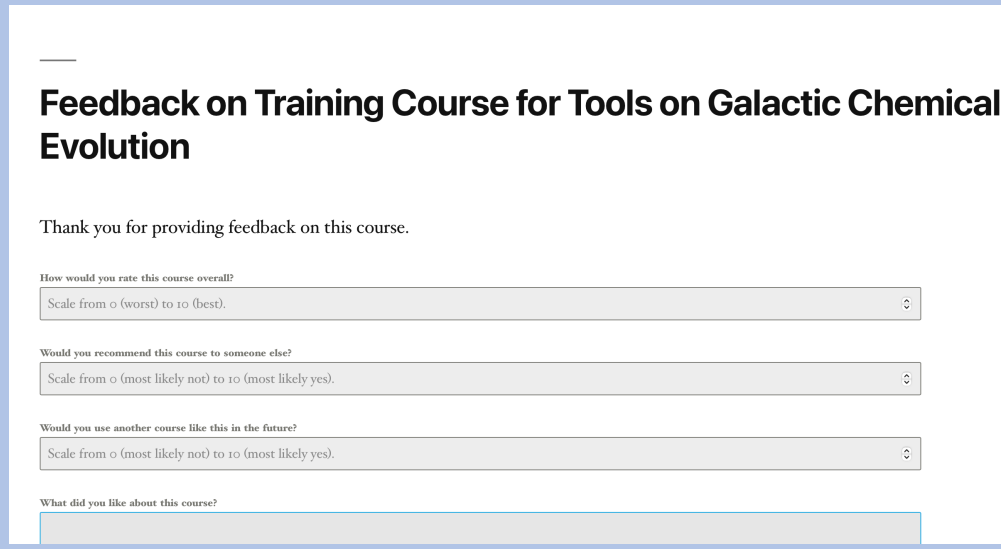
First Name

Last Name

Email Address

Mailing List

Yes, please add me to the mailing list for updates on this course.



Feedback on Training Course for Tools on Galactic Chemical Evolution

Thank you for providing feedback on this course.

How would you rate this course overall?

Scale from 0 (worst) to 10 (best).

Would you recommend this course to someone else?

Scale from 0 (most likely not) to 10 (most likely yes).

Would you use another course like this in the future?

Scale from 0 (most likely not) to 10 (most likely yes).

What did you like about this course?

Online Feedback – results

- 13 people entered via the entrance survey
- 6 people made it to the exit survey

- One detailed response – appears to be testing the functionality of the form

- Optional participation in the surveys means low response rate

- Appears at least 5 of the ‘users’ were bots

(as of 05/04/2023)

In-person Feedback

- Taken at the NPA-X school

- Questions:
  1. Do you feel able to use OMEGA+ for basic chemical evolution modelling after this session?
  2. Will you consider using OMEGA+ as part of your research going forward? Why or why not?
  3. What did you like about this session?
  4. What could be improved about this session?

In-person Feedback - results

- Demographics of the NPA school:
  - 45 attendees in total (28 PhD students, 5 postdocs, 12 staff)
  - 20 female, 25 male
  - Students represented from a variety of institutions across Europe, USA, Canada and India

- Had 29 survey respondents
  - All groups of people represented

In-person Feedback - results

- Do you feel able to use OMEGA+ for basic chemical evolution modelling after this session?

  Yes = 17

  Somewhat = 9

  No = 3

Summary of comments:

- Some felt they would feel more able to use the code if they had the opportunity to build a model from scratch.
- Others said they wanted more detail on how more of the parameters worked in order to feel confident using OMEGA+ for their own modelling.

In-person Feedback - results

- Will you consider using OMEGA+ as part of your research going forward?

  Yes = 5

  Maybe = 12

  No = 12

Summary of comments:

- Of the ‘nos’, 11 said they would not be using OMEGA+ as GCE is too far away from their field (e.g. nuclear physics experiments)
- Of the ‘maybes’, 10 added that they would want to understand it better before deciding if it would be appropriate for their work
- Of the ‘yes’, some elaborated that they already worked on GCE and would be using OMEGA+ as another model to try out. Others said they were currently studying stellar modelling and nucleosynthesis and would like to be able to do simple GCE modelling.

In-person Feedback - results

What did you like about this session?

The jupyter notebook format was helpful for the participants to visualise the concepts.

Participants enjoyed the hands-on way of learning and liked how interactive the session felt.

Participants enjoyed that the knowledge was gradually built up over the course of the session.

Participants enjoyed the enthusiastic presenting style and the explainers of the main concepts of before starting each task.

In-person Feedback - results

What could be improved about this session?

Feedback seemed to be split into two opinions

Opinion 1)

- Those who are more experienced in modelling, wanted a more detailed explanation of how the code works on a deeper level. For example:
  - What each module does in more detail and the parameters available to be changed.
  - How to input their own observational data or stellar yields instead of the ones already included.

Opinion 2)

- Those who are not as experienced with modelling or chemical evolution wanted more examples of each task and more practice before moving on.

Results of the Feedback – key themes

- More than half of the participants who responded feel able to use OMEGA+ after completing the course
- Though not many of the participants would use OMEGA+ in their work going forward, it is largely because they are too far removed from the field
- Most of the participants wanted more examples of how the code works ‘under the hood’
  - This could aid those who said they would use it if they had a better understanding

Moving forward

- More in-person training:
  - A 2nd in-person training event for new PhD students hosted at University of Hull in September
  - Frontiers Summer School Michigan (May 2023), 30-35 new users trained

- Releasing a 2nd part for the online course
  - Making and constraining a GCE model
  - May modify the survey questions to bring them inline with the in-person feedback

- Finding better ways to promote the online content to increase engagement
  - Social media
  - Email
  - YouTube

- Developing the course for researchers based on NPA school feedback

UNIVERSITY OF HULL

CHETEC INFRA