CASANZ
Clean Air Society Of Australia and New Zealand

GRAMM / GRAL TRAINING

ONLINE COURSE: 6 / 7 / 13 / 14 / 15 OCTOBER 2020

COURSE OVERVIEW

This 10 hour intensive course provides an overview of the Graz Lagrangian Model, GRAL, and the Graz Mesoscale Model, GRAMM.

GRAMM and GRAL are open source modelling codes developed by the Graz University of Technology, Austria. This course provides an overview of both models, providing participants with the tools needed to install the software, set up projects, generate and process results and conduct quality assurance.

Course topics include:

- Overview of the GRAL Model system
- GRAL: installation, project set up, edit/import emissions, post processing
- GRAMM: import meteorological data, define grid, terrain and land uses, wind field analysis and observations matching
- Advanced options: complex terrain and buildings, odour dispersion modelling, tunnels
- Recommendations and restrictions
- Hands on exercises using the GRAMM / GRAL / GUI executables

Standard registration is available to 25 September 2020.

PRESENTER

Dr Christian Kurz, Graz University of Technology, Austria

Christian works at the Institute for Internal Combustion Engines and Thermodynamics at the Graz University of Technology. Within the framework of his doctoral thesis, a combined emission-dispersion tool for air quality inventories was developed and tested for the City of Klagenfurt. This methodology has already been applied to most major cities in Austria. Since 2004, Christian has applied GRAMM/GRAL for numerous environmental studies and worked as the primary trainer for GRAMM/GRAL face-to-face training in Austria. Christian is also part of the model development team and provides model support.

DATES/TIMES

The course will be presented in five, 2-hour Zoom sessions in October 2020.

6 October 2020	7 October 2020	13 October 2020	14 October 2020	15 October 2020
•5 to 7 pm AEDT	•5 to 7 pm AEDT	•5 to 7 pm AEDT	•5 to 7 pm AEDT	•5 to 7 pm AEDT

The sessions are designed to be interactive including discussion and hands-on exercises. Participants that miss a live session can catch up using the recording. The recording will be available to watch until 30 October 2020.

COURSE PROGRAM

Session 1: Tuesday 6 October 2020, 5 pm – 7 pm AEDT

- Overview of the GRAL Model System
- Installation of GRAL
- Project set up
- Editing emissions/buildings/receptors

Session 2: Wednesday 7 October 2020, 5 pm to 7 pm AEDT

- GRAL micro scale flow field
- GRAL post-processing
- GRAL import sources/ buildings

Session 3: Tuesday 13 October 2020, 5 pm to 7 pm AEDT

- GRAMM: Import meteorological data
- GRAMM: Define grid/domain
- GRAMM: Terrain data / landuse data
- GRAMM: match-to-observation

Session 4: Wednesday 14 October 2020, 5 pm to 7 pm AEDT

- GRAMM / GRAL complex terrain and buildings

Session 5: Thursday 15 October 2020, 5 pm to 7 pm AEDT

- Sourcing and preparing Australia data for GRAMM / GRAL
- QGIS for data preparation
- Australian hands-on example

NOTES:

- Some hands-on exercises may be assigned as homework, dependent on how quickly the class moves through the material. Homework exercises will be reviewed at the start of the next session.
- The hands-on examples in Sessions 1 to 5 will be Austrian case studies, as they have been developed alongside the course content and are applicable to each learning module. Session 6

WHAT WILL YOU LEARN?

Completion of the course will provide attendees with the skills and hands-on experience to undertake GRAL / GRAMM modelling projects.

COURSE MATERIALS

Course participants will receive a soft copy of the course slides, course exercises and course certificate.

SOFTWARE

The GRAL Lagrangian particle model was developed specifically to accommodate low wind speeds that are common in inner Alpine Austrian basins. Uniquely GRAL incorporates a feature for modelling road

tunnel portal emissions. GRAMM is a Eulerian prognostic, mesoscale wind field model which can be coupled with GRAL for modelling scenarios with complex terrain.

The GRAL modelling system is increasingly used in Australia and New Zealand, with the 2019 CASANZ conference featuring a GRAL stream for the first time. The portal emissions capability lends the model to road projects whilst functionality to incorporate complex infrastructure and vegetation provides modelling options not covered by traditional air dispersion models.

GRAMM and GRAL are open source freeware available to download from: https://gral.tugraz.at/

CAQP

The course attracts 10.5 Certified Air Quality Professional (CAQP) continuing professional development (CPD) points.

PRICING

Standard Registration – available to 25 September 2020

- Member: AU$1,650
- Non-member: AU$2,150
- Student / retiree: AU$830

Late Registration – after 25 September 2020

- Member: AU$1,800
- Non-member: AU$2,300
- Student / retiree: AU$980

NOTE: It is cheaper to become an individual member of CASANZ than pay the non-member price. Click here to join.

DISCOUNTS

Only one discount type is applicable per registration, the following discounts are available:

- Multiple registration discount: three or more registrations from the same organisation receive a 20% discount. Apply the coupon code Multi20 at the checkout.
- Government employee discount: 10% discount on the applicable member rate is available for all government employees who are CASANZ members. Apply the coupon code Government at the checkout.

REGISTRATION

Registration is via the CASANZ website: www.casanz.org.au

ENQUIRIES

Please contact Janelle Wildish, web@casanz.org.au, for all enquiries relating to this course.