

EosFit and Equations of State of Solids

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21-22 March, 2024

A 1.5 day short course held in conjunction with the
2024 DGK meeting



Participants will learn how to fit crystallographic data of volumes, unit-cell parameters and elasticity with Equations of State (EoS) to determine the parameters of an EoS of solids, and how to critically evaluate the results in the light of experimental uncertainties and the theoretical basis of EoS.

The course will be taught with worked examples using the EosFit software, which is freely available on-line at www.rossangel.net and widely used (>1200 citations).

The course will be taught in English. A normal level of mathematics for PhD students in sciences and a basic knowledge of equations of state, bulk moduli etc. will be assumed. Participants will install the EosFit software on their laptops before the course and will use the software on their own laptops during the classes.

Logistics

- The course will start after the closing ceremony of the DGK meeting on Thursday 21st March.
- The lectures will continue on the morning of Friday 22nd March, from 9 – 12:30.
- The lecturers will be available Friday afternoon to discuss individual datasets or topics with students.
- The workshop will take place in the BGI building on the campus of the Universität Bayreuth.
- The course is free, but admission will be limited. To register for the course, please send an email to rossangelsoftware@gmail.com.
- Participants should organise their own accommodation.

Lecturers

Ross Angel is a Research Director in the National Research Council of Italy (CNR). He has been a research crystallographer for over 35 years, focusing on the structure-property relationships of key industrial and geological materials with the aim of providing the basis for rationale materials design and understanding geological processes. He wrote and continues to develop the EosFit software.

Tiziana Boffa-Ballaran is the staff crystallographer at the Bayerisches Geoinstitut in Bayreuth in charge of the X-ray diffraction laboratories. Her research focus is to determine experimentally the elastic behaviour of minerals and materials at high-pressure and high-temperature using X-ray diffraction and Brillouin scattering techniques. She has been continual user of the EoSFit software for more than 20 years.

