

Project Information

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Code license

[GNU GPL v2](#)

Labels

[texture](#), [MATLAB](#),
[polefigure](#), [odf](#), [diffraction](#),
[ebbsd](#), [software](#), [orientation](#),
[crystal](#)

Members

[ralf.hie...@gmail.com](#)

[2 committers](#)

[1 contributor](#)

Featured

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Links

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[R. Hielscher, TU Chemnitz](#)

Groups

[MTEX Forum](#)

A MATLAB Toolbox for Quantitative Texture Analysis

HOT: MTEX 3.4.2 released [Announcement](#) [Download](#) [ChangeLog](#)

Features

- **Crystallographic geometry:** all kind of symmetries, different Euler angle conventions, import from crystallographic information files (CIF)
- **ODF modelling:** any composition of uniform, unimodal, fibre and Bingham ODFs, pole figure simulation, EBSD simulation
- **ODF analysis:** modal orientations, difference ODFs, volume portions, entropy, texture index, Fourier coefficients
- **Pole figure analysis:** [28 data formats](#), data correction
- **Pole figure to ODF inversion:** works for all symmetries, all measurement grids, incomplete and not normalized pole figures, automatic ghost correction, zero range method
- **EBSD data analysis:** [8 data formats](#), data correction
- **Grain detection:** grain boundary analysis, misorientation analysis
- **ODF estimation from EBSD data:** automatic kernel width selection, arbitrarily many individual orientations
- **3D EBSD Data Analysis:** volume visualization, 3d grain reconstruction, topology of 3d grains, i.e. boundaries, neighboring grains, etc.
- **Material tensors:** average tensors from EBSD data and ODFs
- **Elasticity tensors:** elastic stiffness tensor, elastic compliance tensor, Young's modulus, shear modulus, Poisson's ratio, linear compressibility, compressional and shear elastic wave velocities, wavefront velocities
- **High quality plots:** pole figures, inverse pole figures, ODF sections, orientation maps
- **Batch processing of many data sets:** allows scripting to handle multiple data sets automatically
- **Extensive documentation:** 800 pages inline documentation, examples, tutorials, created with [dochelp](#)
- **Platforms:** Windows, Mac OSX, Linux, each 32 and 64 bit, [simple installation](#)
- **Requirements:** [MATLAB 7.1](#) or higher, no toolboxes
- **License:** open source

Have a look at the [FeatureList](#) for more information!

Troubleshooting, Questions, Bugs, Contact and Mailing List

If you experience any problems with MTEX, if you have questions, suggestions, or bug reports please use the links below and we will be happy to help you. **You do not need a google account. Your ordinary email and an arbitrary password are sufficient to login.**

- for questions: [post a question in this forum](#)
- for reporting a bug: [open a bug report issue](#)

- for feature requests: [open a feature request issue](#)
- for a new data interface: [open an interface request issue](#)

We also maintain a mailing list to inform about upcoming releases and workshops. If you like to join this list send us an email.

New Contributors Welcome

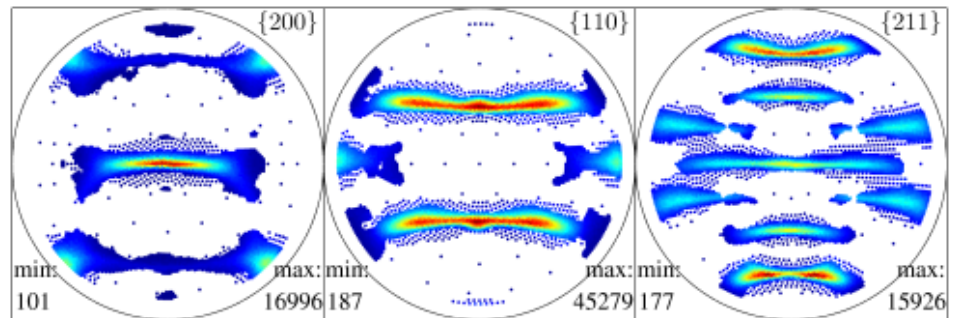
Do you think about a new feature in MTEX. Please let us know, but don't hesitate to have a quick look into the internals of MTEX. Maybe your idea is more easily implemented than you might have dreamed of. When developing MTEX we try to keep it as flexible and extensible as possible. So give your ideas a try and become a contributor of MTEX.

Reference Paper

In case you use MTEX in your research, we would greatly appreciate if you added the corresponding reference from the [list of reference papers](#) to your publications.

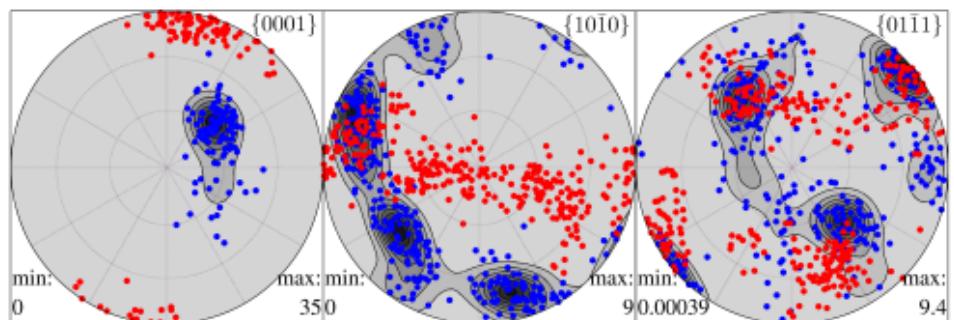
Pictures

Raw pole figure data



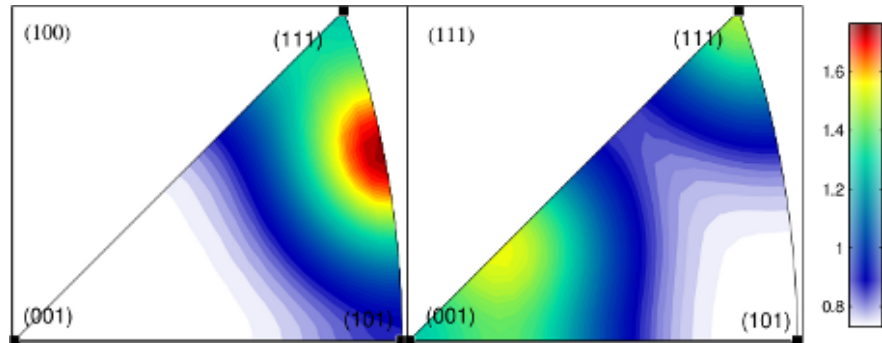
X-ray diffraction data measured at a very irregular grid using an adaptive refinement algorithm.

Recalculated pole figures



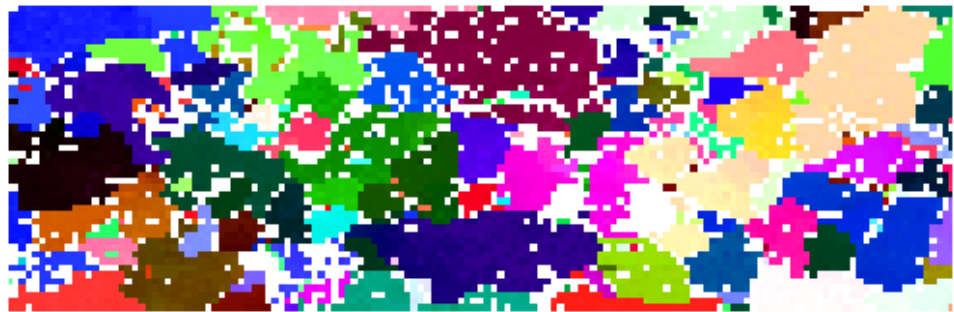
Polefigures recalculated from Neutron diffraction data overlaid with two different EBSD data sets.

Recalculated inverse pole figures



Incomplete inverse pole figure plots with colorbar and annotations

Raw EBSD data

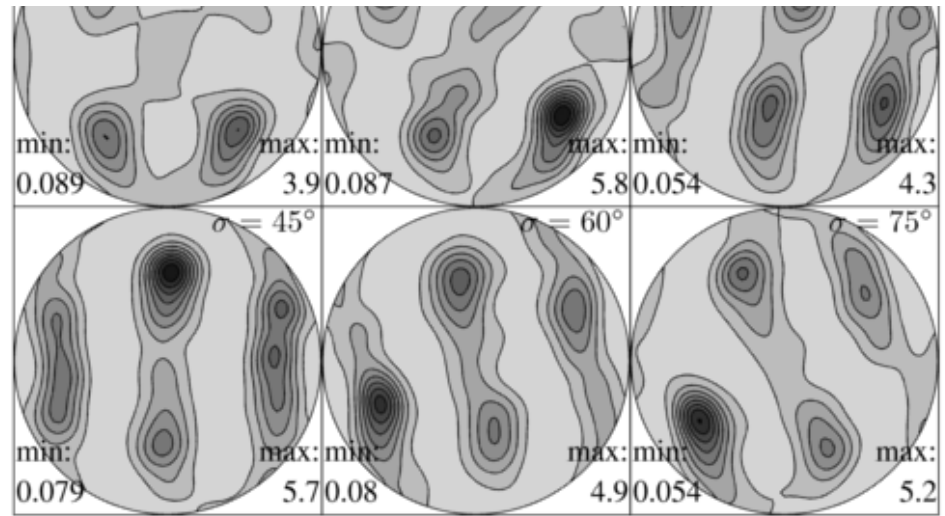


Grain reconstruction



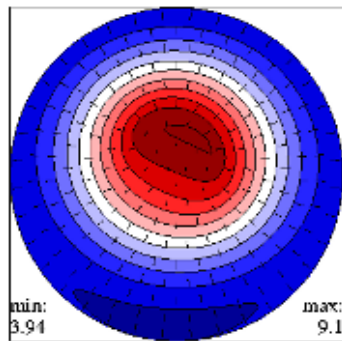
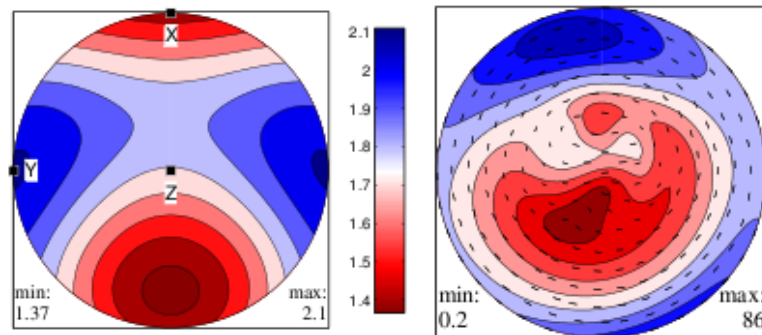
ODF estimated from EBSD data



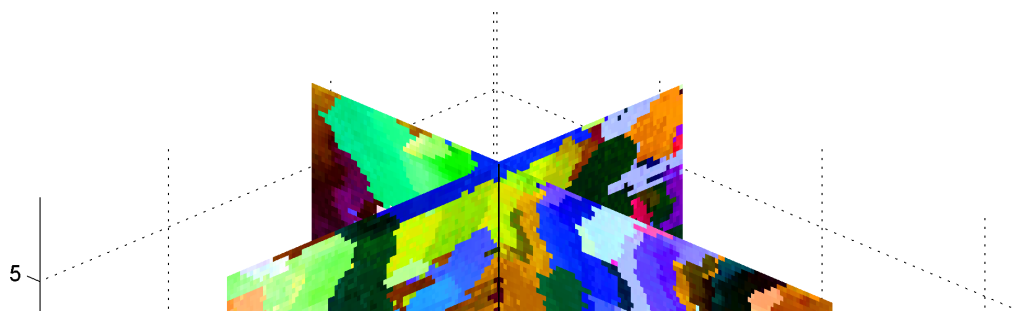


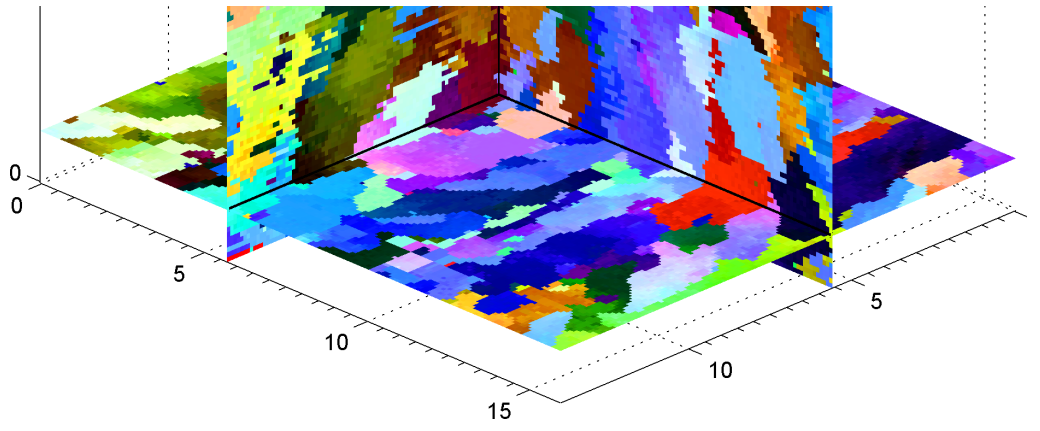
ODF estimated from the left hand EBSD data plotted in 6 sigma section.

Tensors calculated from EBSD data

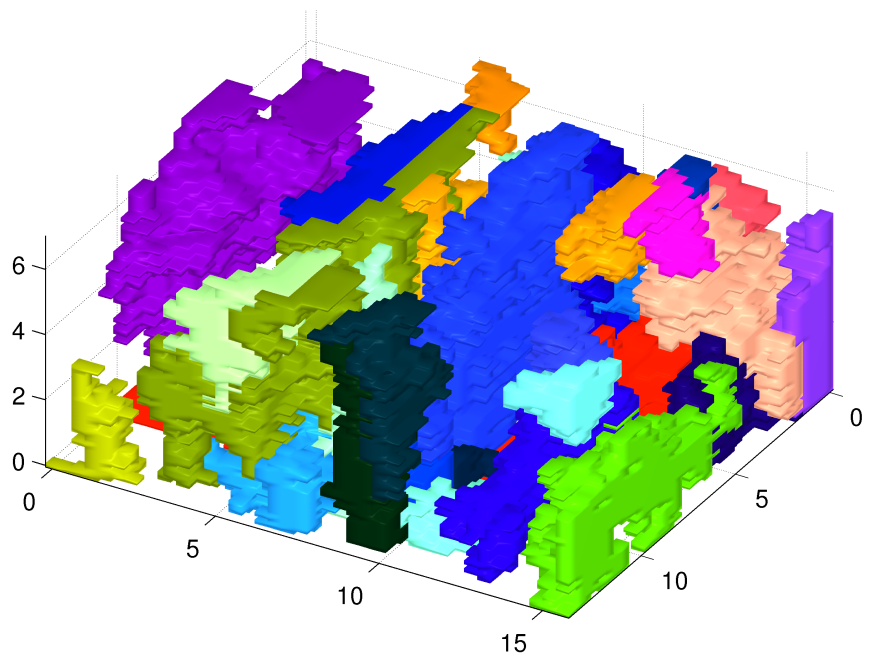


3d EBSD data





3d grains



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