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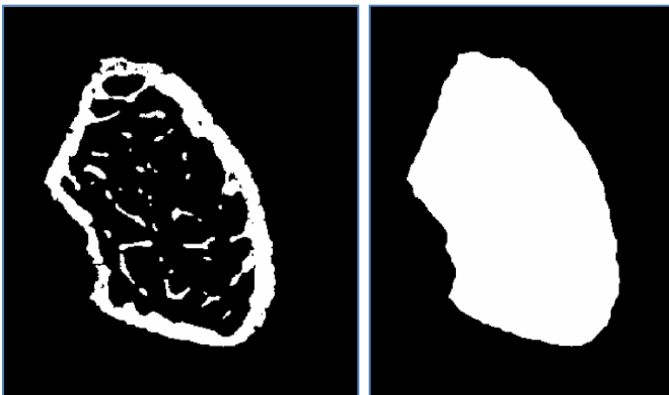
## ● Welcome

Welcome to the fifth issue of the fifth edition of the Bruker microCT Academy newsletter. This time we explore two plug-ins in CTAnalyzer allowing to automatically select a region of interest or object to analyze: the primitive ROI and ROI shrink-wrap.

In many cases the complex geometry of objects makes it undesirable or even impossible to define a suitable region-of-interest manually. For certain types of analyses, if and where objects touch the outside of the volume of interest needs to be taken into account. The ROI shrink-wrap and primitive ROI plug-ins are powerful tools for automatic ROI definition in such cases. Especially when trying to analyze larger numbers of samples in a consistent manner this proves essential.

## ● ROI shrink-wrap

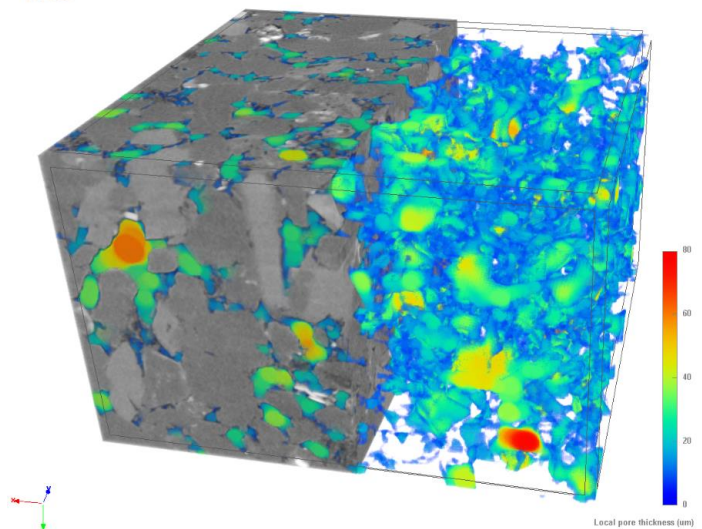
The **ROI shrink-wrap** plug-in gives the possibility to automatically generate a region-of-interest by adapting to the shape of selected objects. It has three modes: shrink-wrap, fill-out and adaptive; these modes have additional options allowing to stretch over holes, remove pores or trim lumps. A description of the options along with practical examples can be found in '[MN121 – ROI shrink-wrap](#)'.



Binary image of a bone sample (left) and a region-of-interest automatically generated in CTAn using the shrink-wrap plug-in (right).

## ● Primitive ROI

The **primitive ROI** plug-in gives the possibility to create an image for the region of interest containing exclusively a certain edge as binary object. Additionally, the intersection with or the addition of that image and a pre-existing ROI, referred to as the infimum and the supremum respectively, can be output. This tool is useful for selecting or excluding structures touching certain edges of the image cube. Especially when used in combination with the ROI shrink-wrap plug-in (fill-out), as is described in '[MN120 – Primitive ROI](#)'. When quantifying the fluid percolation properties inside rock cores, only the pore space connecting from top to bottom needs to be considered. The method note shows how to select this portion automatically.



Volume rendering of a Vosges sandstone sample, scanned using the SKYSCAN 2214 nanoCT at 1.10 μm image pixel size. The pore space connected from top to bottom was selected using the primitive ROI and ROI shrink-wrap plug-ins. It is color coded by local thickness.

## ● Upcoming events

Bruker microCT will participate with an exhibit in the forthcoming conferences. Please click the link below for more information. We hope to see you there!

- [Process Mineralogy](#) Nov. 19 – 21, 2018 Cape Town, South Africa
- [ORS](#) Feb. 2 – 5, 2019 Austin, USA
- [iCT](#) Feb. 13 – 15, 2019 Padova, Italy
- [EMIM](#) Mar. 19 – 22, 2019 Glasgow, UK
- [AACR](#) Mar. 29 – Apr. 3, 2019 Atlanta, USA

## ● Bruker microCT news

- Many of you may already have noticed that the Bruker microCT website has joined the main [Bruker webpage](#). Software updates are available from [Bruker software download page](#), access can be gained after registration. Alternatively, software updates as well as manuals and other documentation can also be downloaded from [Bruker Support](#).
- InstaRecon® software new release version 2.0.4.5 is available. Please find more details on [InstaRecon® webpage](#).
- We are glad to announce the next Bruker microCT User Meeting in 2019 will be held in Mechelen from 4<sup>th</sup> to 5<sup>th</sup> June, 2019. Save the date! More information will come.

## ● Image of the month

Volume rendering image of a marine sediment core in a 6.3 mm diameter plastic tube. The pore structure is clearly resolved, as well as interior and surface details of the foraminifera. The sample was scanned using the SKYSCAN 2214 multiscale X-ray nanotomograph at 1.7 µm image pixel size. The 11 Mp large format CCD was used, giving a 4032 x 4032 x 2300 pixels data volume after reconstruction.

