CT Scanner CAF Central Analytical Facilities STELLENBOSCH UNIVERSITY

CT NEWS

The Stellenbosch CT scanner facility newsletter

"more than just a scan"

May/June 2016

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http://blogs.sun.ac.za/ctscanner/files/2016/05/shoe_cavity.stl

Training schedule

There are a number of training opportunities coming up in June, see below dates and costs involved

1. CAF training initiative: Introduction to micro and nanoCT – 20 June (FREE)

http://academic.sun.ac.za/saf/training_Midyear.html

Paid advanced courses – 1 day – R2000 pp, includes 1 week access to analysis facility, focused on real CT data analysis, hands-on. First hour free: 9:00-10:00.

1. CT data analysis for biological and agrisciences: 10 June
2. CT data analysis for engineers & materials scientists, industrial non-destructive testing: 17 June
3. CT data analysis for the geosciences: 24 June

BOOK NOW, spots are limited

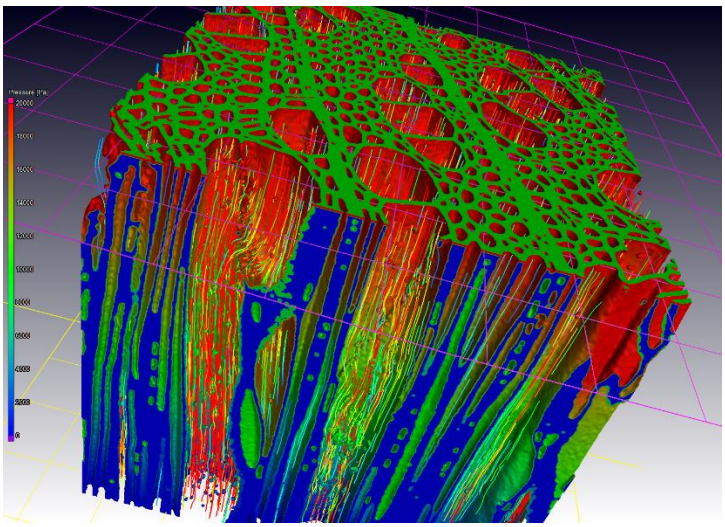
Welcome

In this issue we share two nice examples – a reverse engineering example including the actual CAD data (download the STL files direct from the CT scan data) and another example for our research clients: simulation using 3D images, which can be especially useful when using nanoCT data.

Since we have some maintenance this month, we are using the time to offer a variety of training courses. These one-day courses all include a free first hour including lab tour, so use the opportunity to come over and see for yourself how industrial CT can work for your application.

Fluid flow simulations

MicroCT and nanoCT data sets can be used as the basis for simulation and testing of materials properties, such as fluid flow and permeability, thermal conductivity and more. The advantage of using real world data for simulations is that the result can be visualized and understood in 3D, different types of materials can be compared and different regions of a sample can be analyzed and compared. This permeability simulation of water flow inside wood was done using nanoCT data.



Fluid flow simulation. The pressure difference and fluid flow streamlines are visualized in 3D. http://blogs.sun.ac.za/ctscanner/image-based-simulations-fluid-flow-in-wood-microstructure/

Reverse engineering a shoe

Why reverse engineer a shoe? Well, measuring the internal cavity of a shoe and determining its shape can assist in developing better, more comfortable shoes, or comparing different designs with one another, on the internal geometry, which is where it counts. In this example we provide actual STL data (which can be downloaded from our site and opened in any CAD viewer eg. AutoDesk).

More information:

http://blogs.sun.ac.za/ctscanner/reverse-engineering-of-a-shoe/

iCT 2017 conference: Leuven, Belgium

Please see below invitation from the organizers of the industrial CT 2017 conference in Belgium.

The relevance of industrial Computed Tomography is ever increasing. The iCT2017 conference, organized in Leuven 7-9 February 2017, promises to provide once more a key occasion for knowledge exchange and networking in this domain. Traditionally organized in Wels, this conference will now for the first time be organized outside Austria, hence emphasizing the international character of this major event on industrial CT.

Papers are invited from prospective authors from industry, universities and research institutes. For more information on iCT2017, please visit the conference website (http://www.iCT2017.org) or contact the organizers at info@iCT2017.org. We look forward to welcoming you in Leuven.

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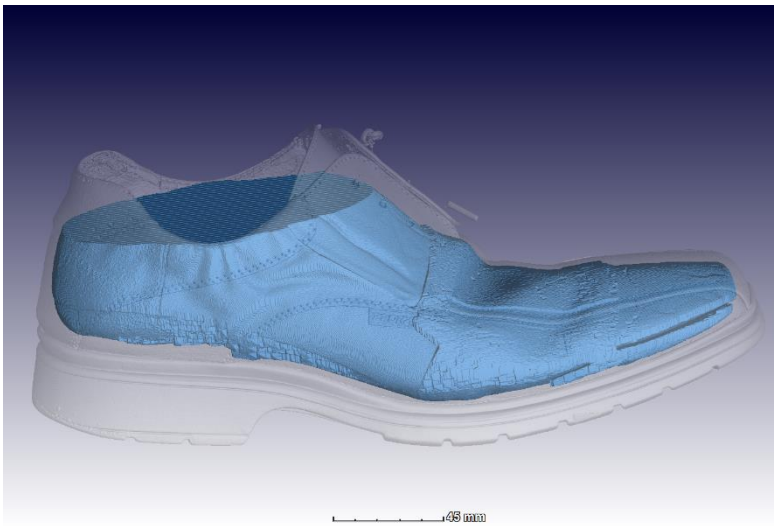

CT Scan of a shoe shown in 3D: top shows the outside surface and bottom shows the internal cavity with shoe made transparent. STL files of both available for download as example reverse engineering data.

Acknowledgements

The CT scanner equipment acquisitions were made possible with grants from the National Research Foundation and Stellenbosch University. The Department of Science and Technology Internship program is also acknowledged for its support of this facility. We encourage and welcome any form of sponsorship or support in order to keep delivering the best quality.

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