

# 释放说明

# PerGeos 说明

# Version 2019.4

## 数字岩石可视化、分析和模拟

请阅读这些释放说明，其中包括此次Thermo Scientific™ PerGeos 软件版本中功能更新、改进和变化信息。

欢迎您对此版本提供反馈意见，如您在使用过程中遇到任何问题或有任何改进建议，请通过以下邮箱地址联系我们：[support@colchispetro.com](mailto:support@colchispetro.com)。

### 目录

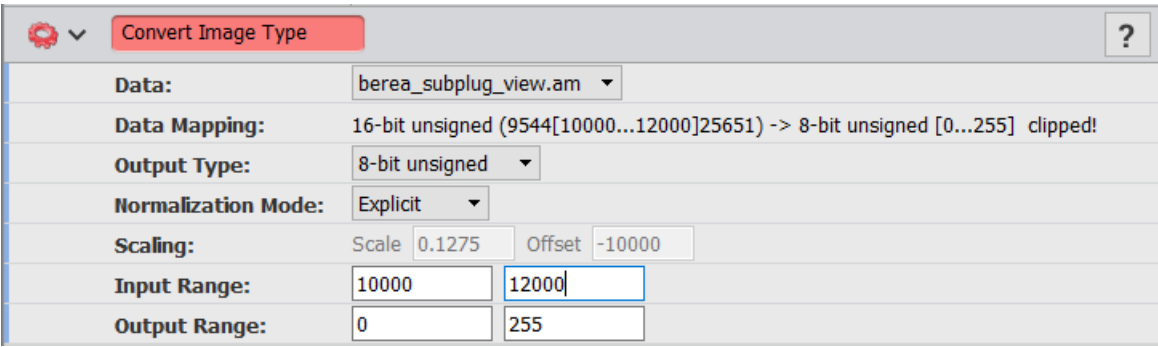
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# 功能增强及新功能

## 转化图像格式

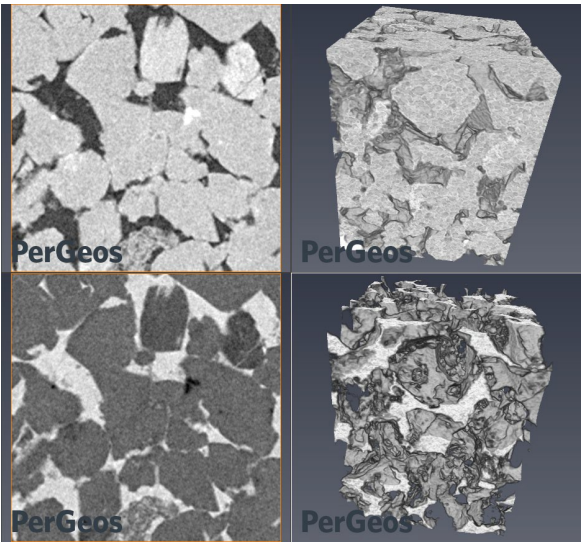
Convert Image Type工具的功能增强。您可通过软件交互界面来填写输入图像的灰度值范围并填写合理的输出图像灰度值范围从而实现自定义化的图像转化。在Data Mapping端口您可更清楚的查看输入图像的初始灰度值范围以及实际用于图像转化的灰度值范围。



图片1：新版Convert Image Type工具截图

## 新色标

新版本中两种全新默认加载的色标分别是：invertedGrayScaley 以及 volrenYellowInverted。在二维及三维可视化中，当背景结构的灰度强度值大于兴趣结构的强度值时，新色标可帮助更好的显现出兴趣结构。



图片 2：贝雷砂岩数据集。上排：标准灰度色标；下排：新版反向灰度色标；左列：切片图；右列：体绘制图。

## Python

### 访问电子表格列

现在，可通过使用新方法HxSpreadSheetInterface.Column.asarray从电子表格列（由一些计算模块生成，如Label Analysis）检索NumPy从而对包含标量值的列进行统计分析。

### 新的远程过程调用程序包

hx.rpc是一种新的远程过程调用程序包，可以通过TCP/IP网络编程接口从PerGeos客户端向解释该命令的PerGeos服务器发送和接收Python命令。例如，您可以从客户端创建含完整的计算模块的工作流程Python脚本并在服务器端执行该脚本。

### 用于深度学习的Albumentations软件包

Albumentations软件包支持快速图像增强，现在可以作为使用深度学习包创建的Python环境的标准配置。

## 兼容性说明

- 当Non-Local Means Filter在CPU Standard模式下运行且Interpretation方式为3D时，图像边缘的小型物体会被移除。这个问题已被解决，然而图像处理时间将随之变慢。
- 所有孔隙度模块默认数值（Propagation Distance, Axis Propagation以及Estimate Shortest Path）已更改为更准确的数值。

参数	旧的默认数值	新的默认数值
Mask	0	255
Seed	255	-1024
Maximum Threshold	4	128

- 由于微软公司已于2020年1月14日起不再提供对于Windows 7的技术支持（详情请见如下网址<https://www.microsoft.com/en-us/microsoft-365/windows/end-of-windows-7-support>），新版本PerGeos也不再提供对于Windows 7系统的支持。  
如您继续在Windows 7使用PerGeos，软件程序仍能使用，但将不再提供技术支持及软件更新服务。

## 操作系统

2019.4 版本的PerGeos软件支持以下操作系统：

- Microsoft Windows 8/10 (64-bit).
- Linux x86 64 (64-bit). Supported 64-bit architecture is Intel64/AMD64 architecture. Supported Linux distribution is Red Hat Enterprise Linux 7.

如需通过PerGeos XPand模块添加自定义功能，您将需要：

- Microsoft Visual Studio 2013 (VC12) Update 4 on Windows
- gcc 4.8.x on Red Hat Enterprise Linux 7

## 已解决问题

Abaqus Input	AA-20938	Materials are now supported when exporting in .inp format, with the following limitation: materials are exported but not their properties. Only fake properties are set, so that ABAQUS can differentiate the materials.
Align Slices	AA-21663	On Mac, the Align > Options... menu was not displayed anymore when using the Align Slice module in Edit mode. The menu has been restored in the Align drop-down menu.
Arithmetic	AA-15097	Arithmetic results were incorrect when values were over the data range. This has been fixed.
Auto Thresholding	AA-15067	The Auto Thresholding module now supports float images as input.
	AA-22131	The Auto Thresholding module did not work properly when executed with XY planes Interpretation, only the first plane was thresholded. Now all the planes are correctly thresholded.
Cylinder Slice	AA-21111	The rendering in Cylinder Slice extra viewer has been fixed for 4K/Retina screens.
DICOM reader	AA-22124	The DICOM reader now supports DICOM files with an Icon Image Sequence containing an implicit length for Pixel Data tag.
	AA-22239	The DICOM reader performance has been improved and now allows to load DICOM files which present some variation from the DICOM standard.
	AA-22237	

	AA-22373	DICOM with Little Endian Implicit Transfer Syntax containing an Icon Image sequence are now correctly read.
	AA-21790	The DICOM reader is now able to read DICOM files with private implemented sequence tag (0009, 1210).
Filter by Measure	AA-22132	The Filter by Measure module did not compute correct results when used with XY planes Interpretation. The command is now applied separately on each 2D slice of the input image.
Gaussian Filter	AA-11332	It is no longer possible to set the Standard Deviation port to a value equal to or smaller than zero.
Image Gradient	AA-12303	When using Image Gradient module with "Interpretation = 3D" , "Gradient type = Sobel" and " Gradient Options = amplitude(euclidean)" properties, the output values could present overflows (i.e., inconsistent intensities). This has been fixed and now the output range of the result is consistent with the input.
Intensity Integral	AA-6496	The Intensity Integral module now takes into account the voxel size defined by the image calibration, in accordance with the documentation and the behavior of the Volume measurement.
Label Analysis	AA-12514	Feret diameters-based measurements (e.g., Length3d, Width3d, Breadth3d, Thickness3d) could be incorrect when applied on a data with large origin coordinates. This has been fixed.
	AA-17400	The NeighborCount measurement returned incorrect results when the Minimum overlap attribute was different from 0. Now it works correctly but the computation can be slower with non-null overlap.
	AA-17369	The NeighborCount measurement has been optimized to avoid useless computation when the cut-off distance property is greater than the image diagonal.
	AA-12873	The VoxelBasedSurface measurement returned null values for labels greater than 32767. This has been fixed.
Label Interfaces	AA-12726	For some volumes the Label Interfaces module could generate straight lines artifacts on volume borders (e.g., on the XZ border faces). This has been fixed.
Licensing	AA-21476	The license checks at the application startup have been optimized in order to reduce the application startup time.

Local/Global Axes	AA-21617	Local Axes and Global Axes modules have been merged into a single module named Axes.
Logical Operations	AA-12318	<p>When applying logical operation to binary images, the result is now a binary image with min-max equal to 0...1.</p> <p>As a result of this fix, all logical operations between a binary image and an image of different type are now forbidden. Indeed, all bits before the significant bit of the binary input were considered equal to 0, which could lead to unexpected results.</p> <p>The projects saved before 2019.4 version which have logical operation modules that fall into this use case can be reloaded but tcl errors will be displayed and the result will not be calculated.</p>
	AA-17372	Using a logical operations module with two images of different types now produces an explicit error message.
Marker-Based Watershed	AA-12304	In some cases, the Marker-Based Watershed module could generate labels which were not existing in the input marker image. Now the computed result is consistent with the input image.
Matlab	AA-21315	Calculus Matlab module now supports Matlab 2019.a version.
	AA-22135	It is now possible to read large matlab data exceeding 32-bit.
Ortho Slice	AA-20921	The Ortho Slice module now supports histogram mapping type for 8-bit signed data.
Python	AA-22218	The User's Guide Python Environment and Package Manager section now documents how to download the Python Deep Learning package when the internet connection fails.
Quantification	AA-22178	For some quantification modules, temporary folders were created by default in %TEMP%/FeiProxy with ownership rights restricted to the logged user. This could generate error messages when another user would try to use the application on the same machine. This has been fixed.
Recursive Exponential Filter	AA-20439	The Recursive Exponential filter module would implicitly upgrade the output image type. This has been fixed: filtering an 8 bits image now outputs an 8 bits image instead of a 16 bits image.
Register Image	AA-17209	The performance of Register Image module has been improved.

Spreadsheet	AA-21280	Copy/paste from spreadsheets could fail depending on the copied table. This has been fixed.
	AA-21058	Using a Tcl script command to update a spreadsheet would cause an abnormal consumption of memory and time. This has been fixed.
Units	AA-20684	The incorrect display of the working unit after deleting a first loaded data has been fixed.
Volume Rendering	AA-21633	The Volume Rendering has been improved and the CPU usage is less intense, now the Volume Rendering instantiation and the camera manipulation are much more fluid.

欢迎您对此版本提供反馈意见，如您在使用过程中遇到任何问题或有任何改进建议，请通过以下邮箱地址联系我们： [support@colchispetro.com](mailto:support@colchispetro.com)