Semi-Procedural Textures Using Point Process Texture Basis Functions

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Replicability from Binaries

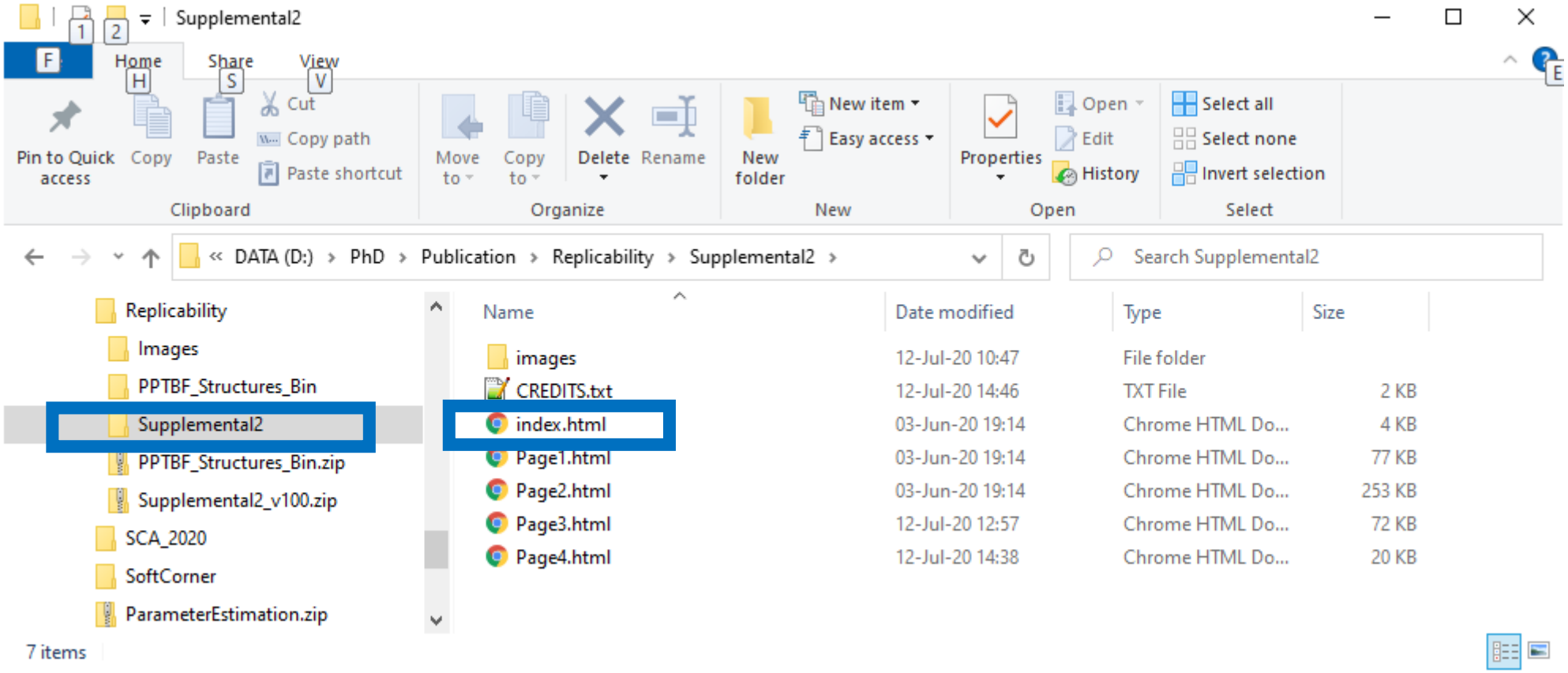
Our GITHUB website: https://github.com/ASTex-ICube/semiproctex
contains the original paper, its supplemental materials, source code and binaries.

I. Retrieving the supplemental material

DOWNLOAD the supplemental material archive:
http://igg.unistra.fr/People/semiproctex/data/Supplemental2_v100.zip

I. Retrieving the supplemental material

UNZIP file: Supplemental2_v100.zip
GO TO directory: yourPATH\Supplemental2
OPEN webpage (double-click): yourPATH\Supplemental2\index.html



I. Retrieving the supplemental material

You should see the webpage on the right.
CLICK ON table of content: 1. Parameters estimation
to see our database of 147 parameter files (.txt format)
that have been used to generate 147 binary images
of our model of stochastic procedural structures.

TABLE COLUMNS:

- LEFT: input image (user provided)
- MIDDLE: image procedurally generated by the program
- RIGHT: parameter file (.txt) used to generate MIDDLE image

The figure 11 of our paper (below) is a collection of 12 of these generated images.

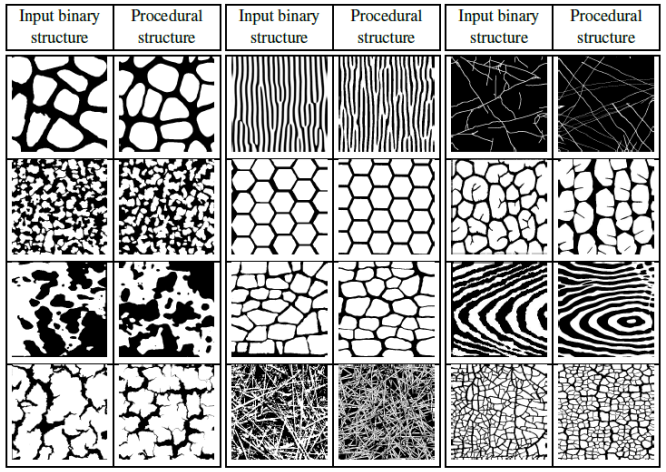
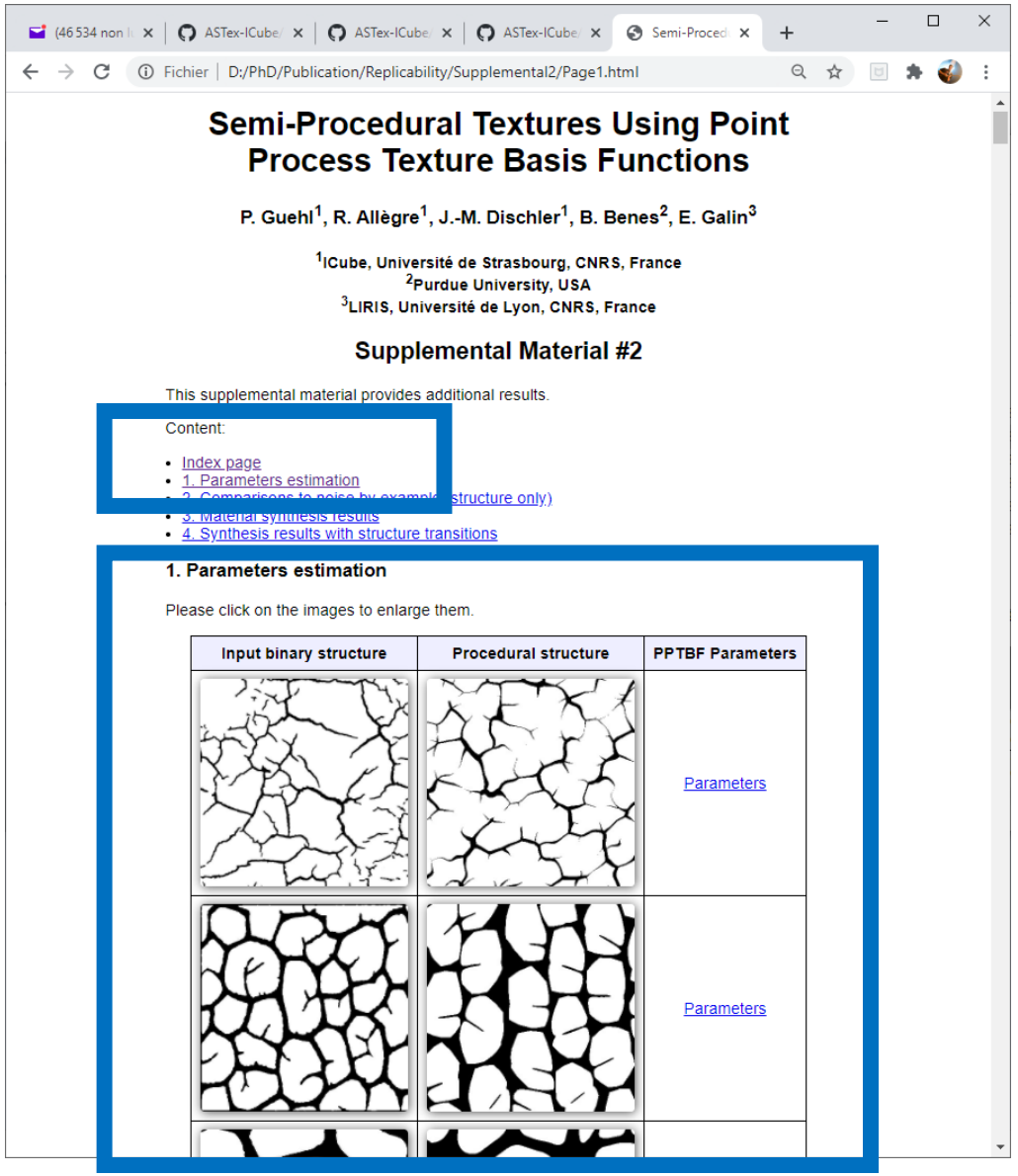


Figure 11: *Evaluation of the capability of PPTBF to produce natural structures (we use segmented images on left): parameters were estimated by querying a collection of 450k samples and by applying refinement.*

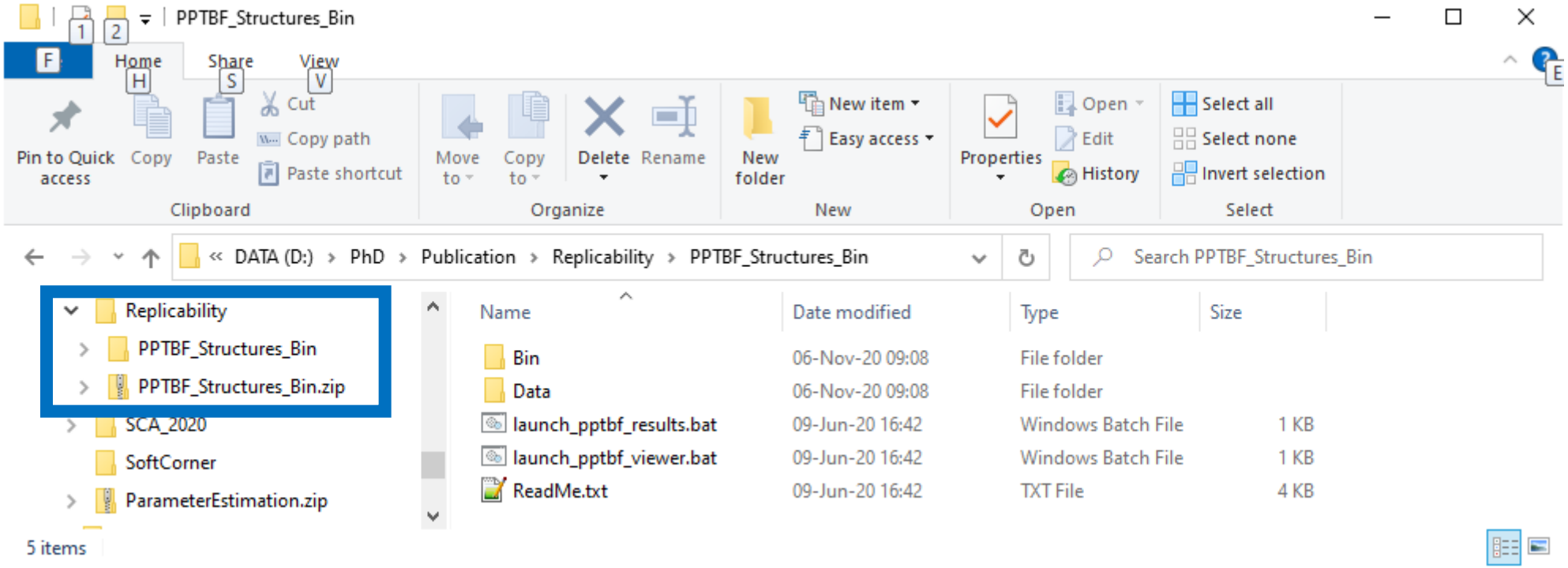


II. Retrieving the binaries

DOWNLOAD precompiled binaries archive: PPTBF_Structures_Bin.zip
http://igg.unistra.fr/people/semiproctex/PPTBF_Structures_Bin.zip

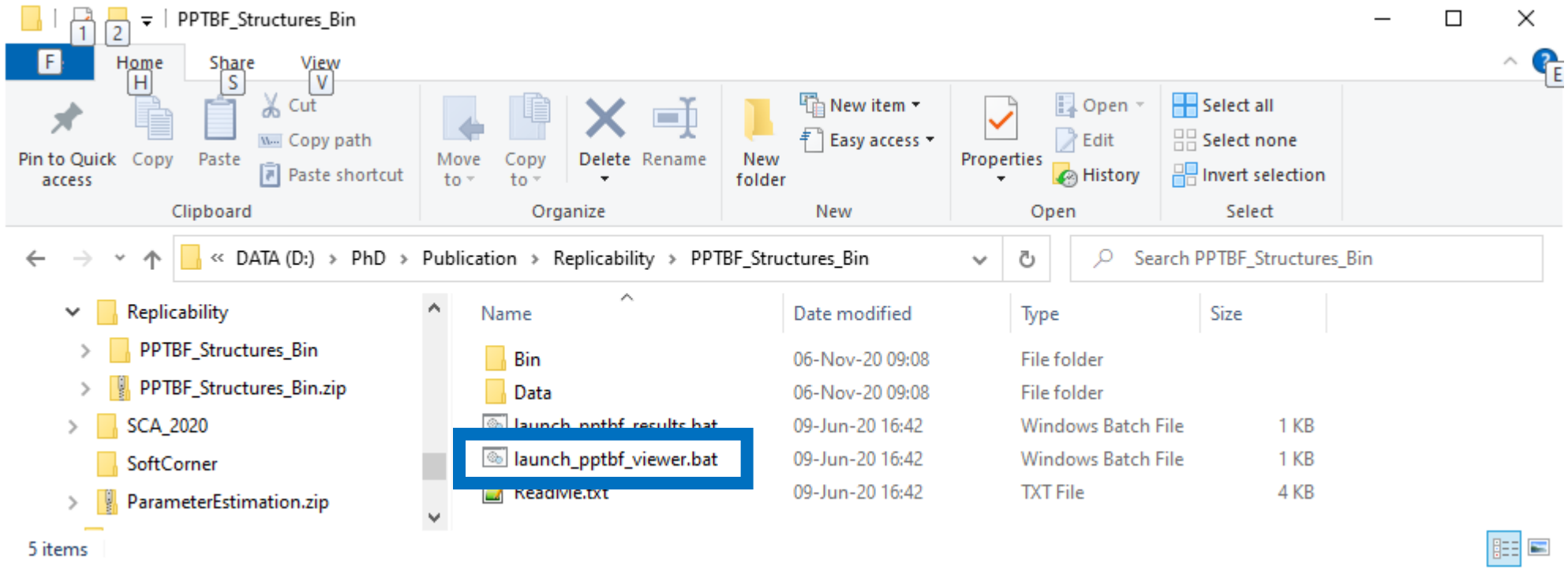
II. Retrieving the binaries

UNZIP file: PPTBF_Structures_Bin.zip
GO TO directory: yourPATH\PPTBF_Structures_Bin



III. Check Graphics Program

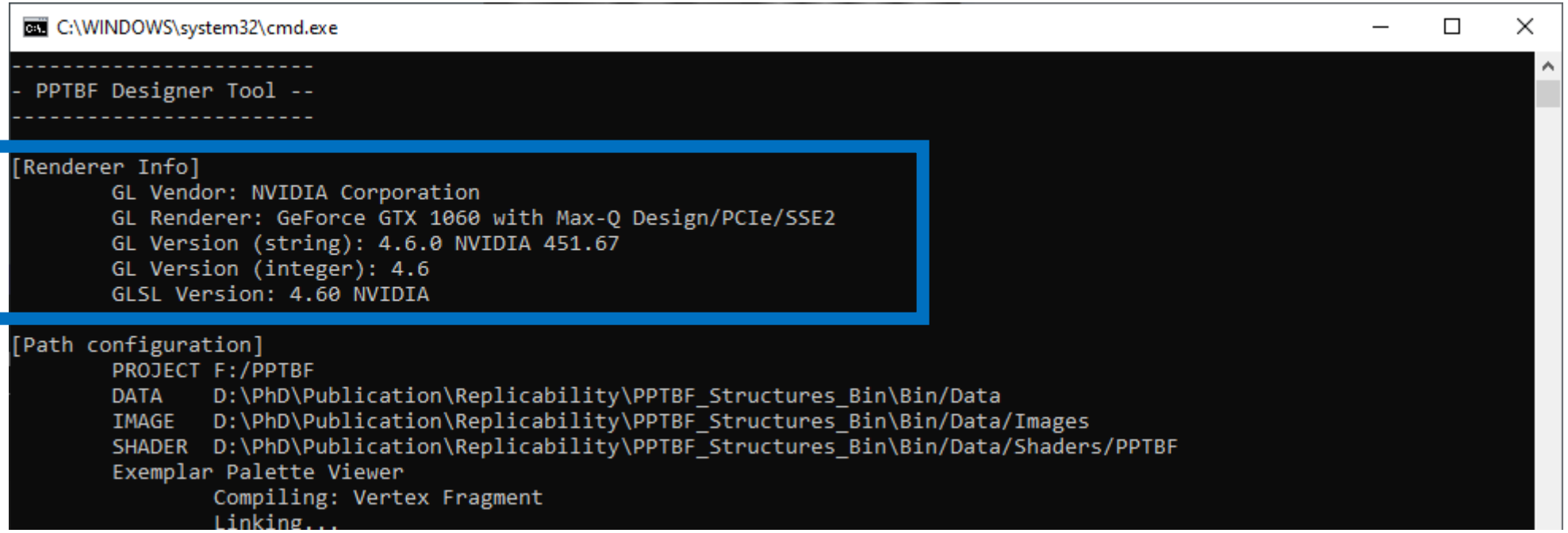
LAUNCH the 3D graphics viewer with SCRIPT: launch_pptbf_viewer.bat



III. Check Graphics Program

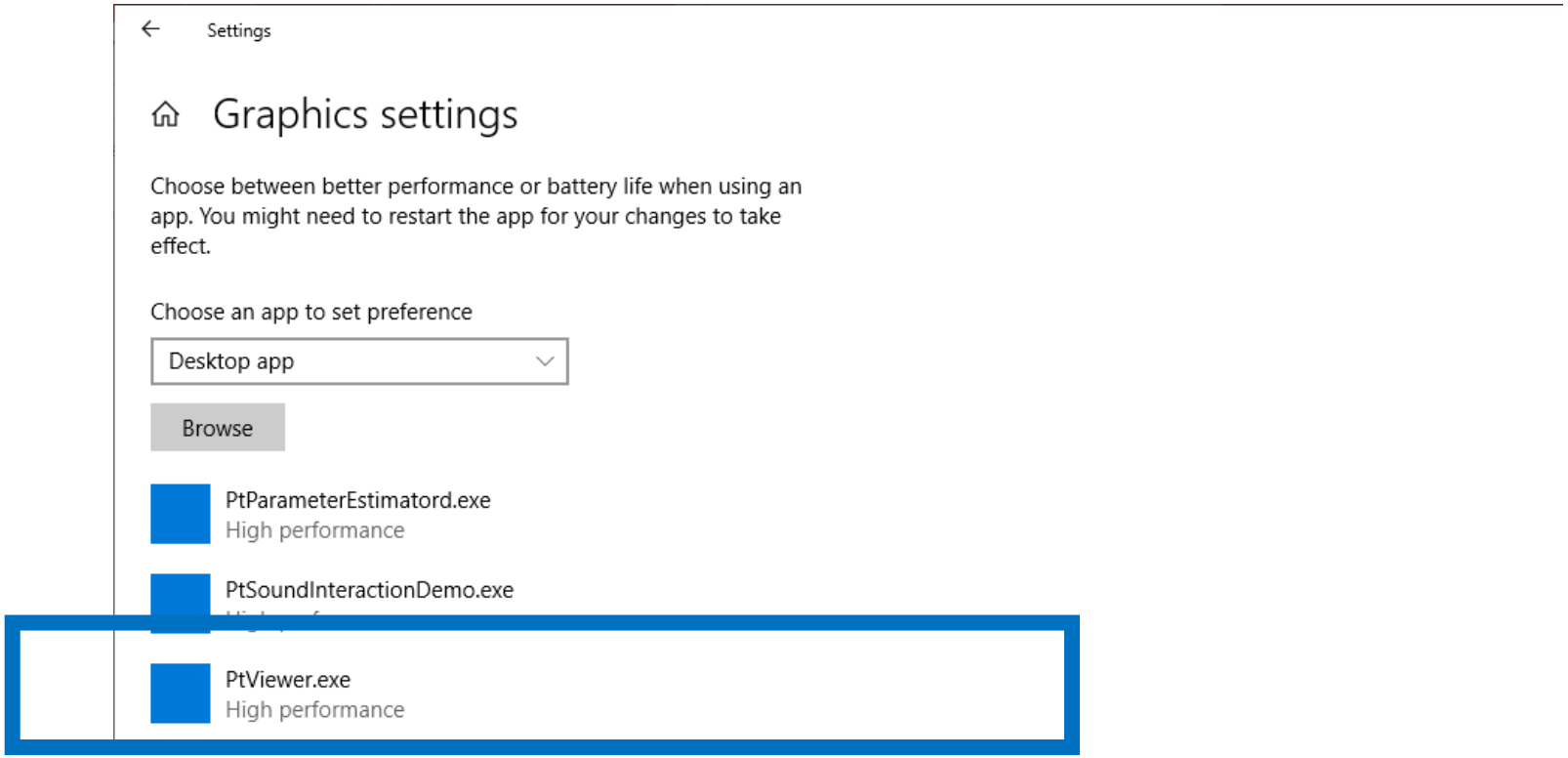
a DOS window opens and LOG some info
Check “Renderer Info”: you MUST see your graphics card (GPU), but NOT an “integrated“ one such as INTEL
NOTE: Program requires a GPU close to NVIDIA GTX 1060

IF “integrated”, the viewer will not launch or crash, see next slide



III. Check Graphics Program

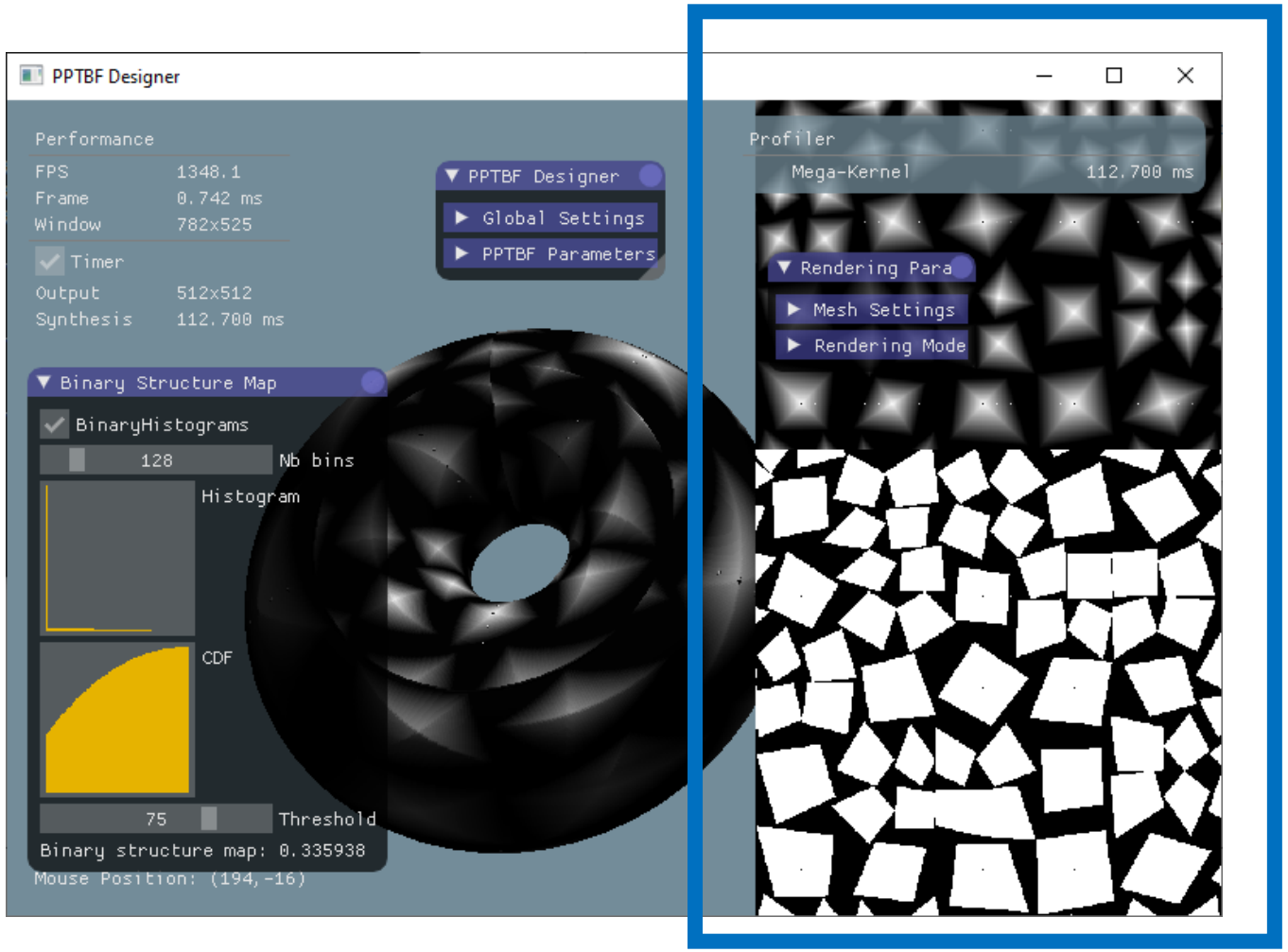
IF using “integrated” device by default (this is classical on LAPTOP to optimize battery),
the two programs yourPath\PPTBF_Structures_Bin\Bin\PtViewer.exe
and yourPath\PPTBF_Structures_Bin\Bin\PtBDDGenerator.exe
have to be added in the list of programs in the “Graphics settings” preferences of Windows 10
to launch it with High Performance



III. Check Graphics Program

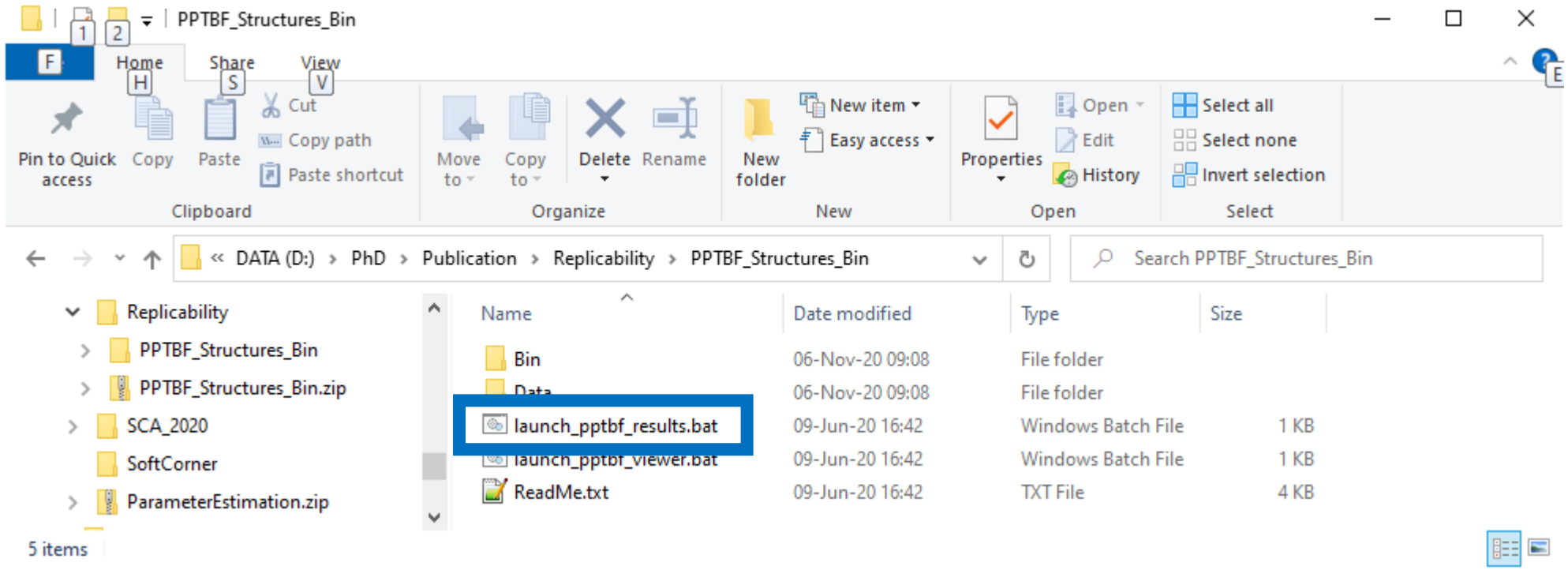
If program works, you should see a 3D graphics viewer with 2D images on the right

- these images are our generated “stochastic procedural structures”
- this is the kind of images we are going to generate in batch mode (with script) to reproduce all our related results



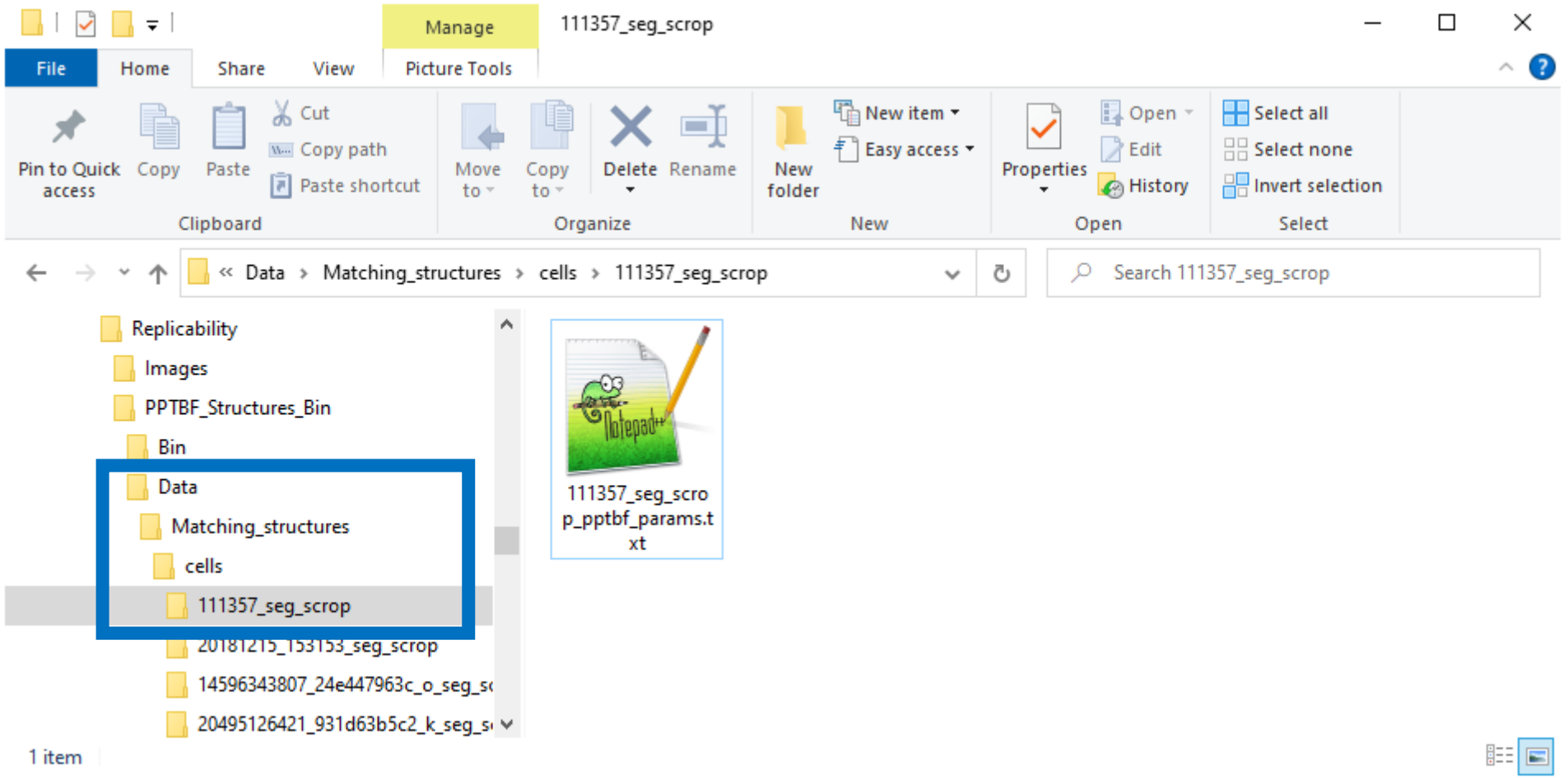
IV. Launch Results generation

LAUNCH the SCRIPT to generate all (supplemental) results : launch_pptbf_results



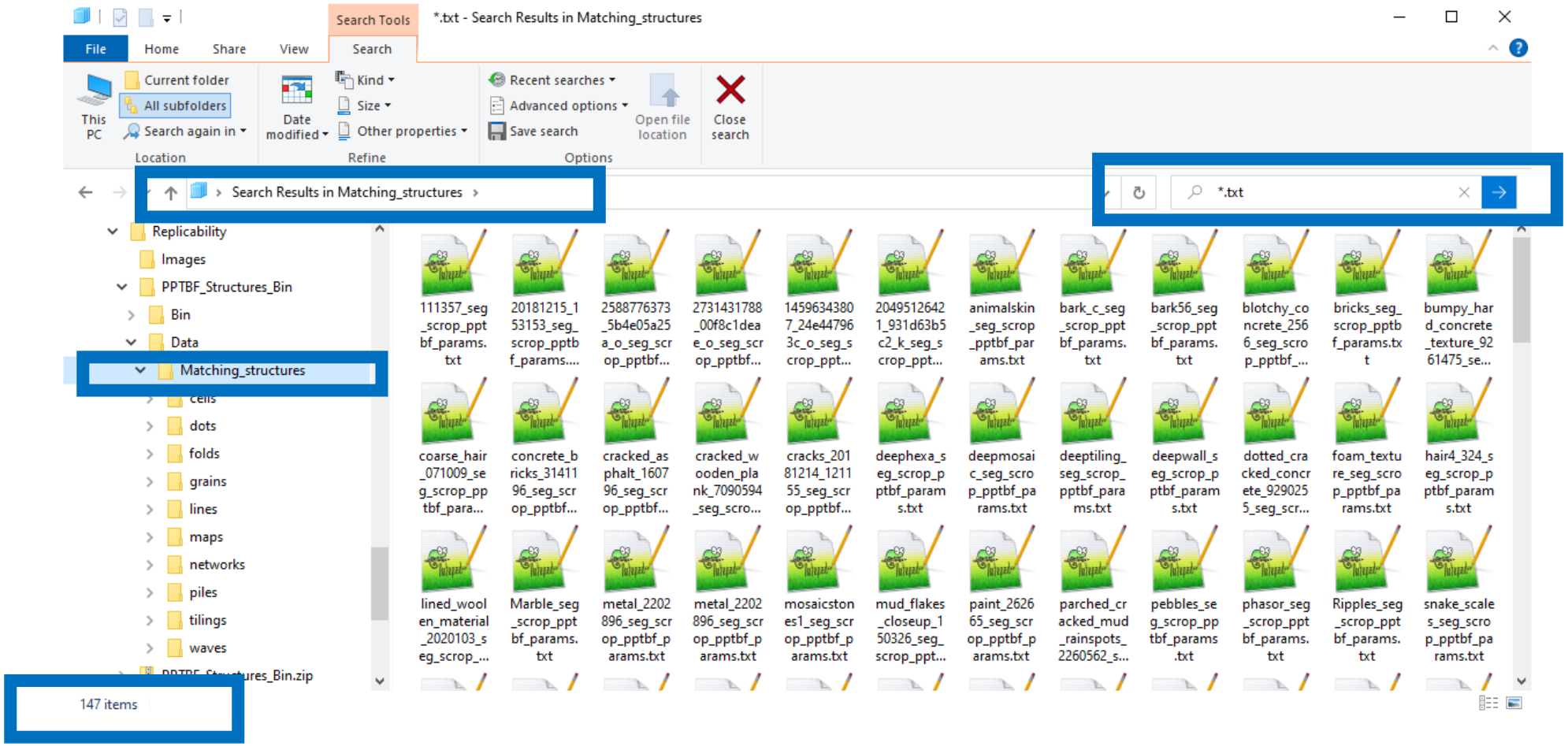
IV. Launch Results generation

The program will generate 2 images for each parameter file located in subfolders of the data directory:
yourPath\Data\Data\Matching_structures
Data is classified by type (cells, lines, dots, etc…) in subdirectories, with 1 directory per parameter file (as below)



IV. Launch Results generation

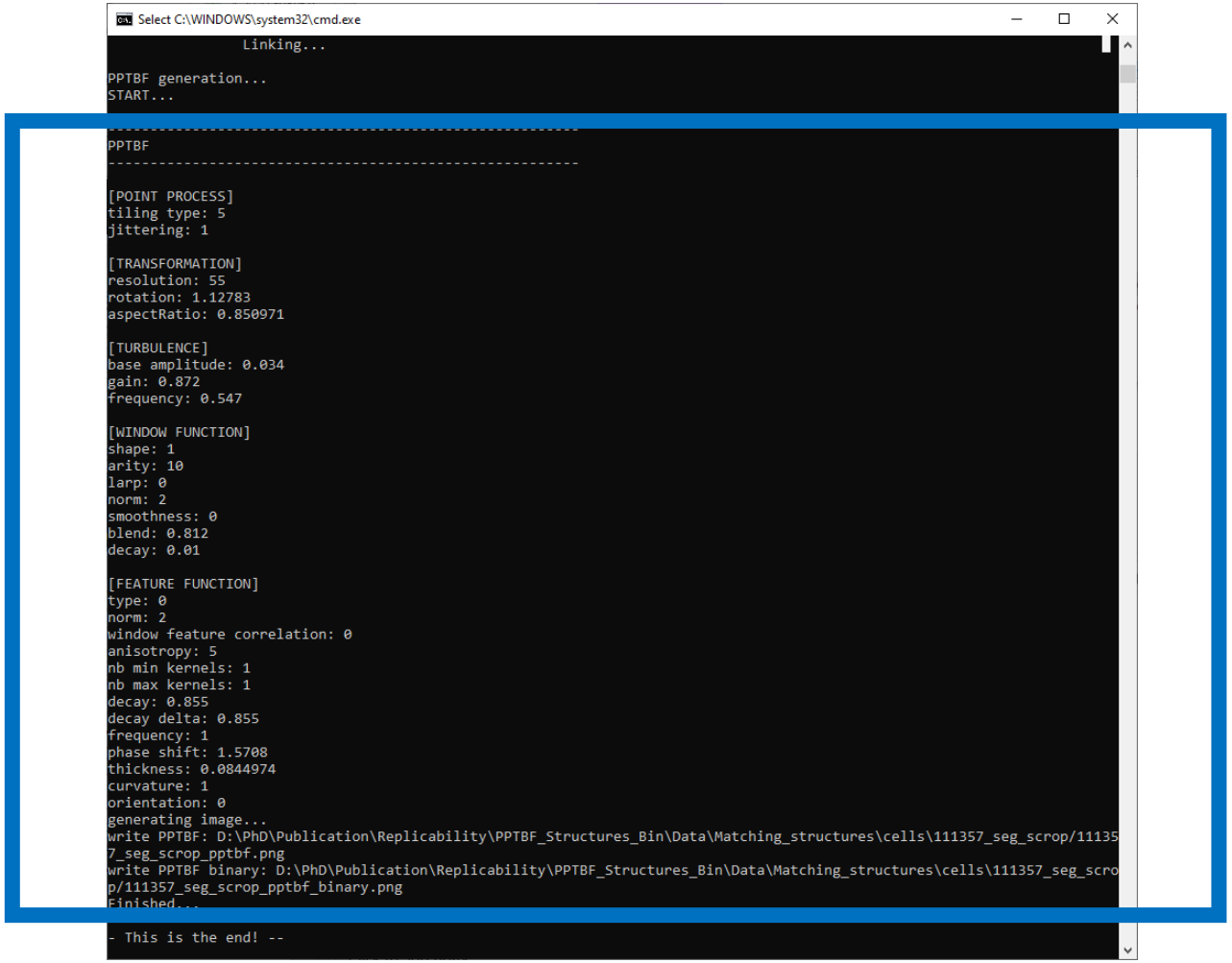
ALL DATA is classified by type (cells, lines, dots, etc…) in subdirectories
TO SEE ALL, just search for parameter files *.txt
Our supplemental material contains 147 files (see below):



IV. Launch Results generation

a DOS window opens and LOG some info

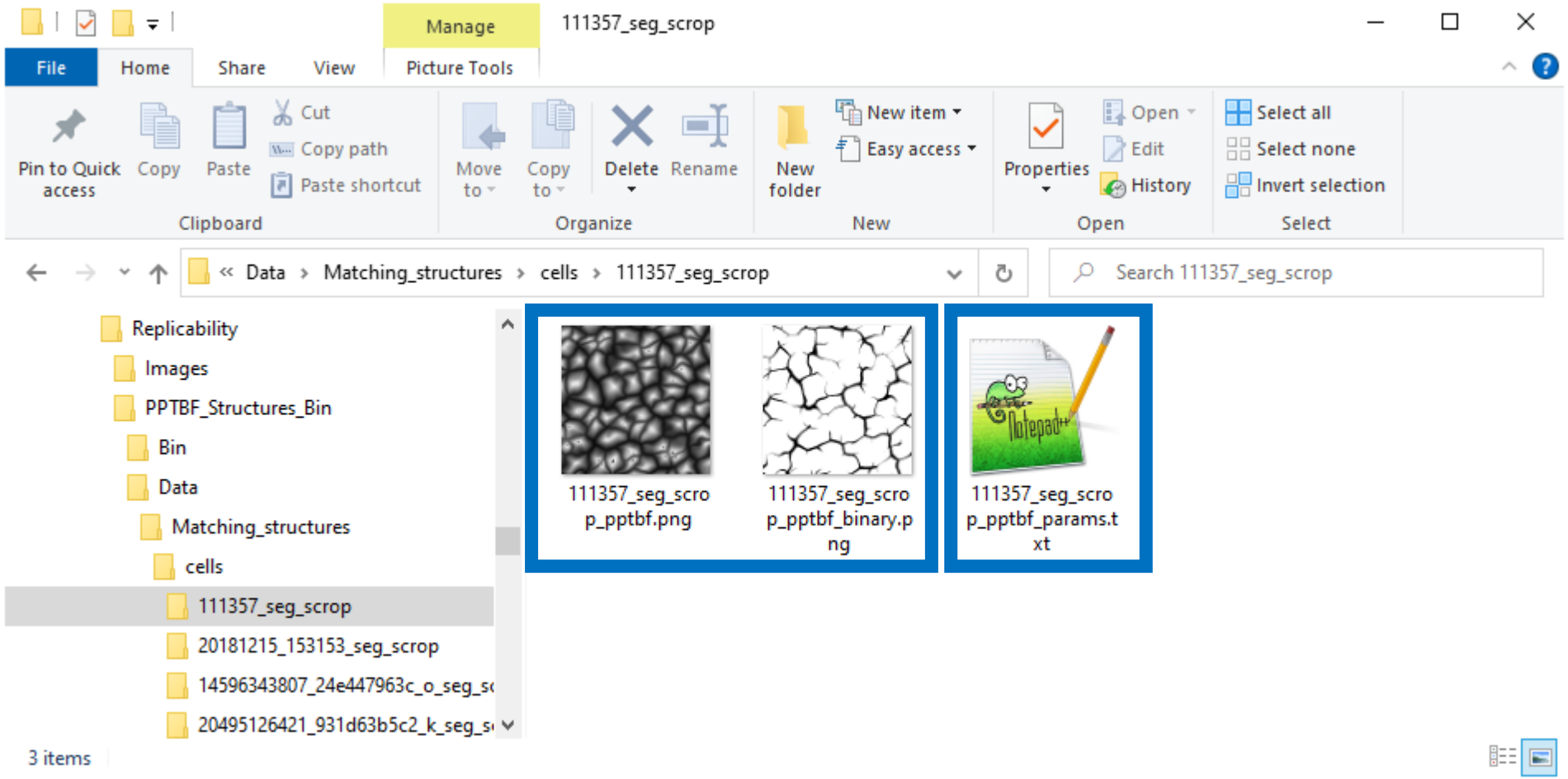
For each parameter file, the program reads it and displays its parameters info, then generate 2 images (.png format) and write them in the same directory



IV. Launch Results generation

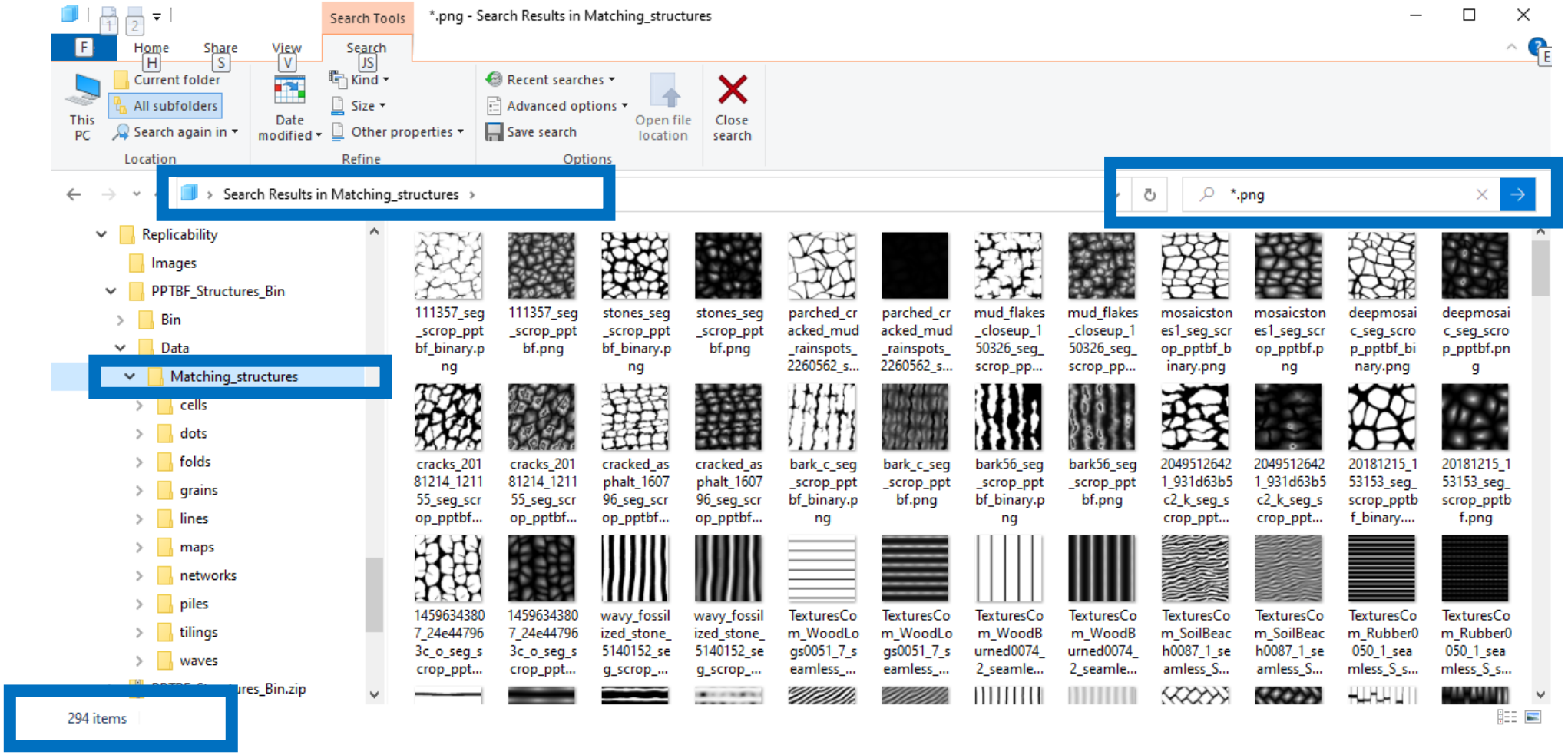
If program works, you should see 2 images (.png) in the same directory for each parameter file :

- one image xxx_pptbf.png that is the stochastic procedural structure (grayscale)
- one image xxx_pptbf_binary.png that is its binary version (the one we want to compare)



IV. Launch Results generation

ALL generated DATA is classified by type (cells, lines, dots, etc…) in subdirectories
TO SEE ALL, just search for generated images files *.png
Our supplemental material contains 2 images for each 147 files, so 294 images (see below):



V. Compare results

In the figure 11, you can find the following replicated images:

LEFT COLUMN (top to bottom):
- 20181215_153153_seg_scrop_pptbf_binary.png
- bumpy_hard_concrete_texture_9261475_seg_scrop_pptbf_binary.png [NOTE: for this image, you may find a difference due to a translation in the original article]
- foam_texture_seg_scrop_pptbf_binary
- mud_flakes_closeup_150326_seg_scrop_pptbf_binary.png

MIDDLE COLUMN (top to bottom):
- phasor_seg_scrop_pptbf_binary.png
- deephexa_seg_scrop_pptbf_binary.png
- mosaicstones1_seg_scrop_pptbf_binary.png
- straw_seg_scrop_pptbf_binary.png

RIGHT COLUMN (top to bottom):
- Marble_seg_scrop_pptbf_binary.png
- 14596343807_24e447963c_o_seg_scrop_pptbf_binary.png
- whiteash_seg_scrop_pptbf_binary.png
- TexturesCom_Crackles0011_S_seg_scrop_pptbf_binary.png

Check next slide for comparisons

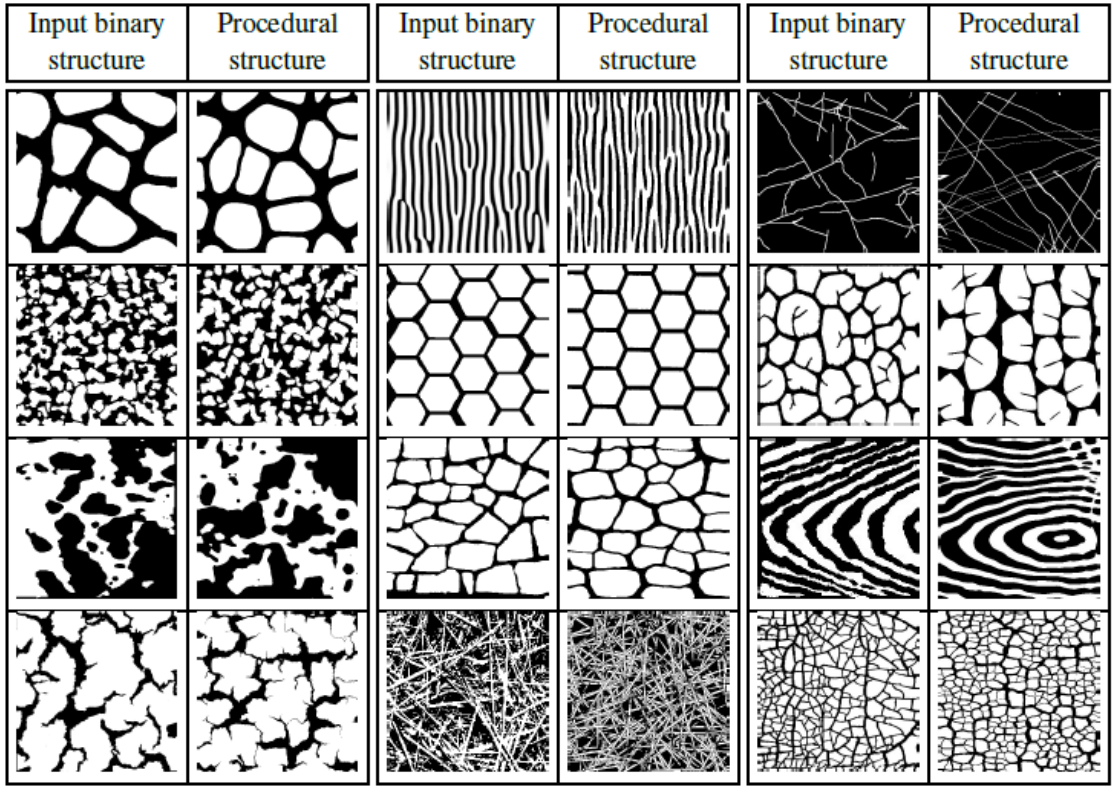


Figure 11: *Evaluation of the capability of PPTBF to produce natural structures (we use segmented images on left): parameters were estimated by querying a collection of 450k samples and by applying refinement.*

V. Compare results

Supplemental Material (extracted snapshots)

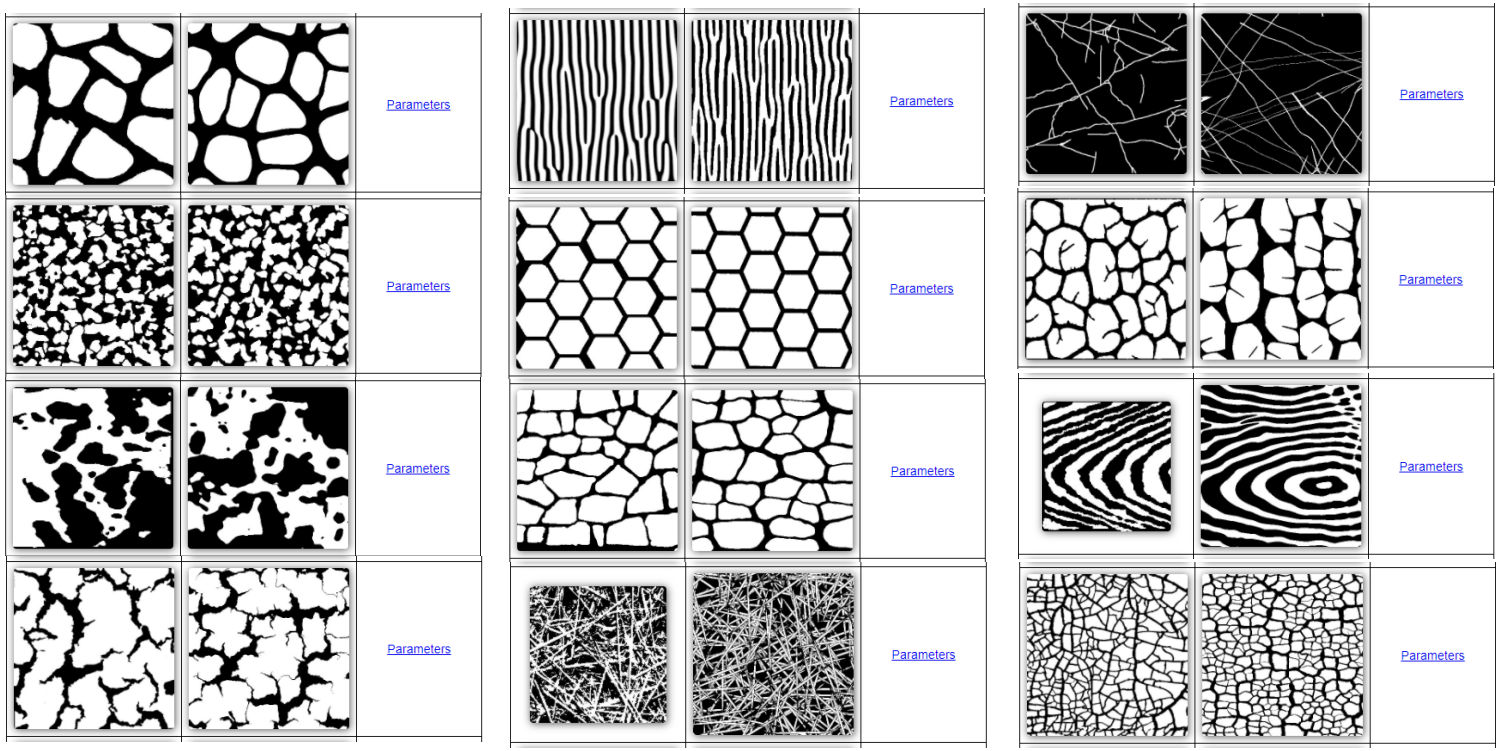


Figure 11 from article

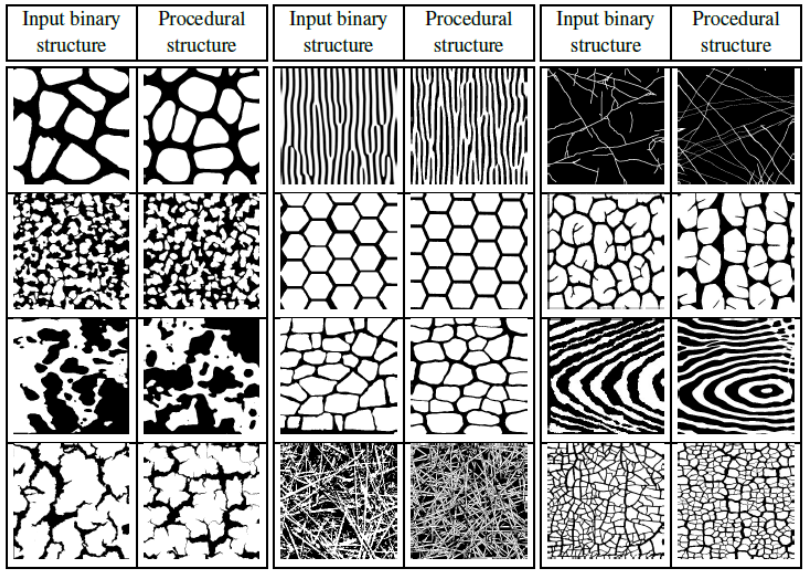


Figure 11: *Evaluation of the capability of PPTBF to produce natural structures (we use segmented images on left): parameters were estimated by querying a collection of 450k samples and by applying refinement.*

Generated Images: located in directory yourPath\Data\Matching_structures\

cells\20181215_153153_seg_scrop	lines\phasor_seg_scrop	networks\Marble_seg_scrop
dots\bumpy_hard_concrete_texture_9261475_seg_scrop	tilings\deephexa_seg_scrop	cells\14596343807_24e447963c_o_seg_scrop
maps\foam_texture_seg_scrop	cells\mosaicstones1_seg_scrop	grains\whiteash_seg_scrop
cells\mud_flakes_closeup_150326_seg_scrop	piles\straw_seg_scrop	cells\TexturesCom_Crackles0011_S_seg_scrop

IMPORTANT

On the left table, we display the directories where the 12 images to compare against figure 11 have been procedurally generated.