

CPU

GPU (CUDA)

MATLAB thread

selecting file

preparing
parameters for
ray-tracing

FOV-curvature
matrices

preparing masks
& parameters
for file-
processing

I_{pp} & I_{ss} in
workspace

visualization

FOV-curvature thread

MEX synapse

MEX synapse

frame-control thread

MEX synapse

finding the
beginning of file

cyclic buffer:
 $10 \times 64\text{kB}$
 \supseteq single frame

frame recognition

MEX synapse

file-reading thread

sequential
file-reading
from HDD
in 64kB blocks

625mln rays traced in
parallel from the droplet
through the trap port &
lens system to CCD

atomic addition of threads

pixels processed in parallel

CODEC: LSB 6-bit
inversion&shift

DEMOSAIC

chosen colors in sequence

field of view correction:
division by {intensity
field curvature+mask}

moving average

700 evenly spaced points