

## Verasonics acquisition scripts to perform uAM imaging

*Rabut et al., Appl. Phys. Lett. 118, 244102 (2021)*

<https://doi.org/10.1063/5.0050807>

All scripts need Vantage-4.2.0 or higher software and a Verasonics scanner

- Sequence LiveView and save uAM.m : uAM live view imaging with option to save sequence of uAM images after pressing [Save Image] button on the Vantage GUI.  
/!\ Not an ultrafast acquisition: this script doesn't allow simultaneous recording of blood flow and AM images. Because of the Live View mode, each uAM image is reconstructed after each Transmit-Receive step, which limits the ultrafast framerate.

For ultrafast acquisitions, see scripts described below:

- RunSetUp\_uAM\_Doppler\_acquire.m : Acquisition script for ultrafast Doppler-uAM imaging  
At the end of each set of 200 IQ images acquired at ultrafast framerate (typically 500 Hz), the Raw Frequency data are saved and stored for offline reconstruction  
/!\ Acquisition mode only /!\
  - RunSetUp\_uAM\_Doppler\_reconAll.m : Reconstruction script for ultrafast Doppler-uAM imaging.  
The script loads the Raw Frequency data acquired with RunSetUp\_uAM\_Doppler\_acquire.m and performs : **1-** the Hadamard reconstruction, **2-** The beamforming of the data **3-** The saving of the beamformed IQ data in .bin format. Each set of 200 uAM IQ Data is saved in two parts:  
- IQ\_AMpos which corresponds to the IQ acquired with the full amplitude pulses  
- IQ\_AMneg which corresponds to the IQ acquired with the two half amplitude pulses (negative sign applied to the final amplitude of the IQ)  
/!\ Reconstruction mode only /!\
- ➔ See Data\_processing\_AMcombinedDoppler.m script to process the IQ data to obtain AM and Doppler images