

## **Motion Estimation Algorithms in Ultrasound Imaging: Principles and Hands-On Development**

By: Damien Garcia, Creatis, Lyon, France

Motion estimation by ultrasound imaging plays an important role in clinical diagnosis. It mostly includes estimation of blood velocities and tissue displacements. This course will provide an overview of basic techniques for motion estimation, including speckle tracking, color Doppler and vector Doppler. It will be supported by some demonstrations in Matlab. It will also be illustrated by vascular and cardiac examples. The following topics will be addressed:

- Back to basics: RF, I/Q & speckles
- Motions in the cardiovascular system
- Doppler & vector Doppler
- Speckle tracking by block-matching
- Other techniques for motion estimation
- Fast 'n easy examples using Matlab
- Cardiovascular applications & clinical perspectives