



International Conference on Image Processing Theory, Tools & Applications



<http://www.ipta-conference.com/ipta22/>

Special Session Chairs:

Noémie Debroux, Institut Pascal
(UMR6602), Le Puy-en-Velay,
France

noemie.debroux@uca.fr

Antoine Vacavant, Institut Pascal
(UMR6602), Le Puy-en-Velay,
France

antoine.vacavant@uca.fr

Special session title:

CUTS: Computational Understanding of thin Structures

Aims & Scope

Computational understanding of thin structures has been widely investigated since decades as a cornerstone step in many image processing and analysis chains while remaining a challenging open question. They relate to various applications such as blood vessel segmentation and reconstruction from medical images, detection and characterization of cracks in materials, automatic delineation of cells in microscopic images, etc. In such cases, these structures are very hard to handle because they have complex, sparse and tortuous shapes, and state of the art algorithms or machine-learning models might interpret the thinnest parts as image noise and artefacts. Moreover, these tools should preserve important properties of these objects such as their connectivity, correct bifurcations or other morphological features like the length or radii of branches for instance.

Topics of Interest

This special session “CUTS: Computational understanding of thin structures” welcomes papers dedicated to this challenge, covering a wide range of topics, such as:

- *Segmentation, detection, enhancement, reconstruction, etc. of thin structures.*
- *Image processing and analysis algorithms for thin structures understanding.*
- *Machine and deep learning for thin structures understanding.*
- *Fundamental and applicative researches related to thin structures.*
- *Applications: biomedical, material imaging, medical imaging, etc.*