EUFANET

Advances on Magnetic microscopy for 3D devices: increased resolution with very long working distance

Fulvio Infante

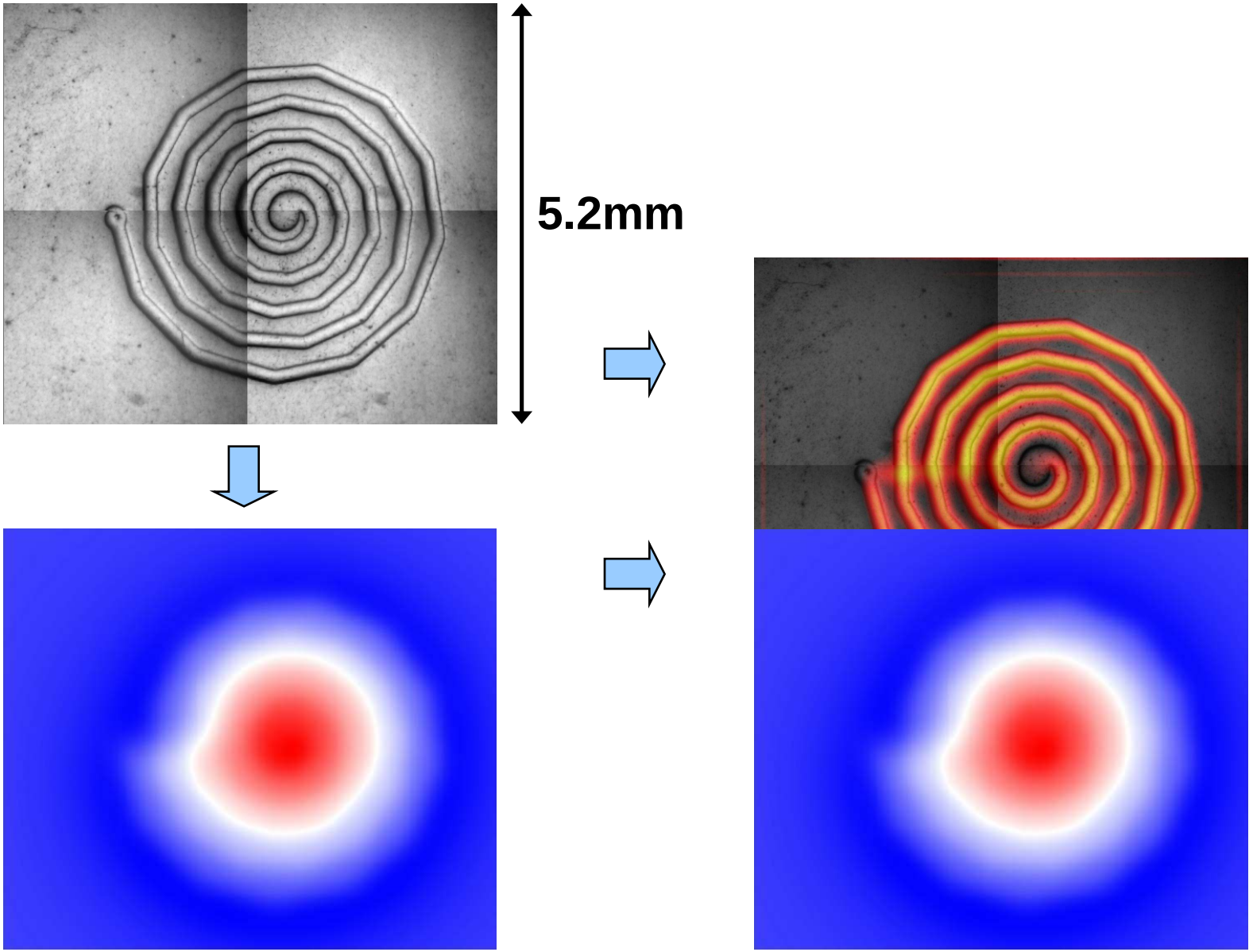
Centre Nationale d'Etudes Spatiales (CNES)

Toulouse, France

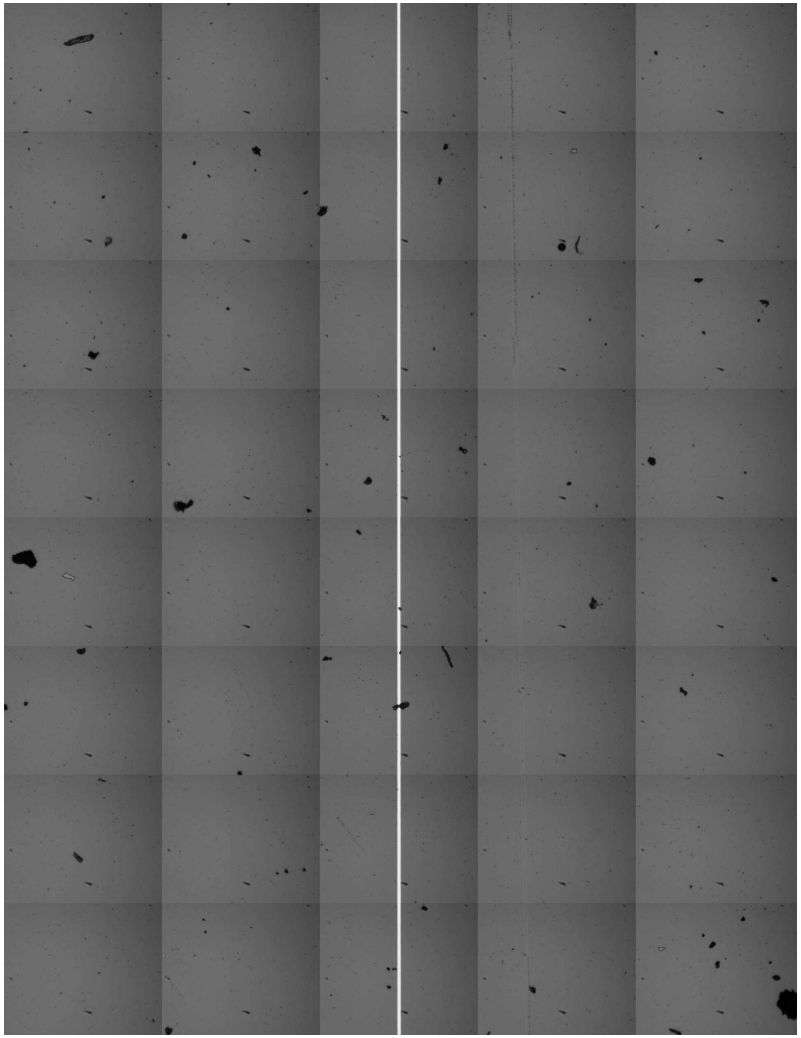
Introduction

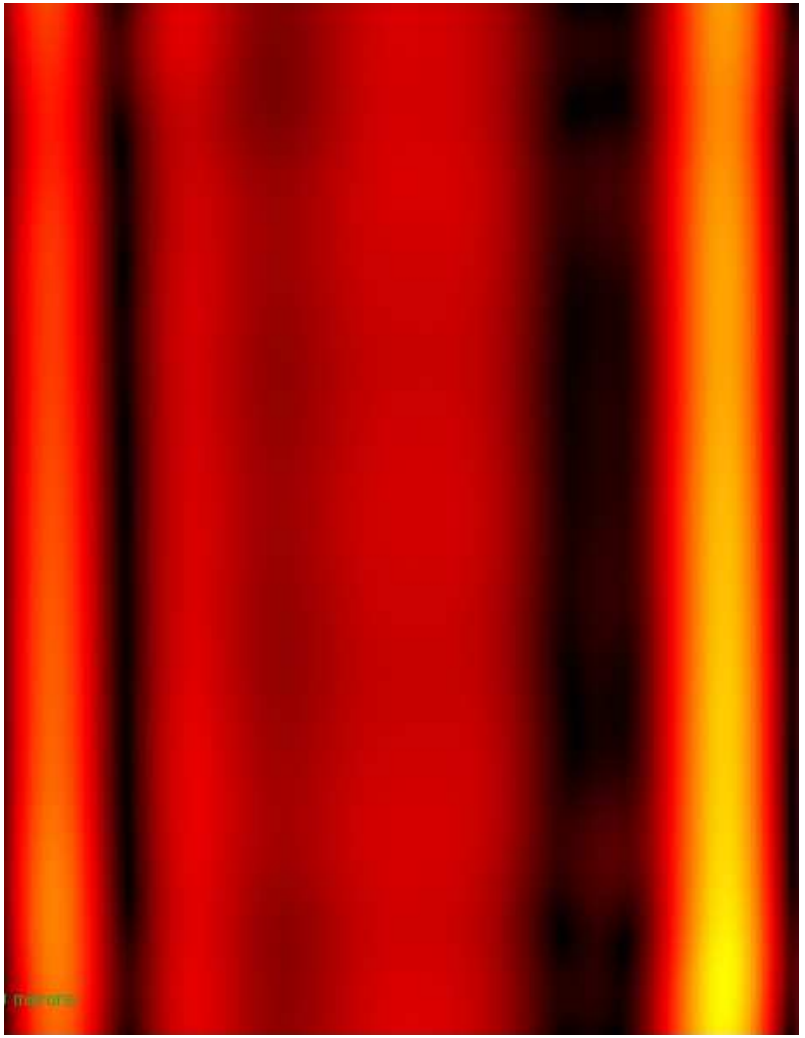
- Magnetic Microscopy is a very powerful tool for failure localization
- The Magnetic Current Imaging technique generates a current cartography from the measurement of the magnetic field
- However, it has limited resolution due to the calculations performed on the data
- Furthermore, it can be applied to currents flowing up to few mm away from the magnetic probe

200um scan

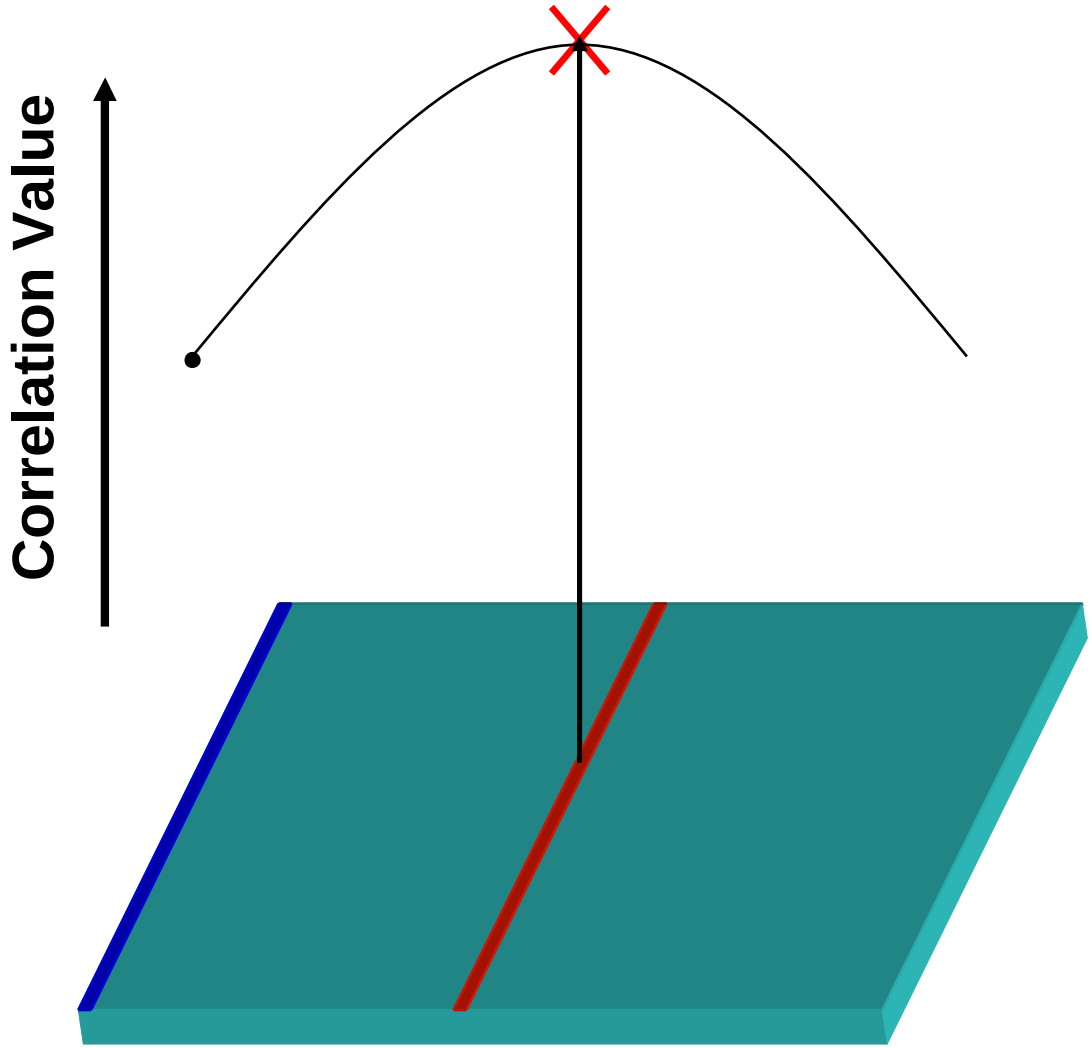


2cm line scan

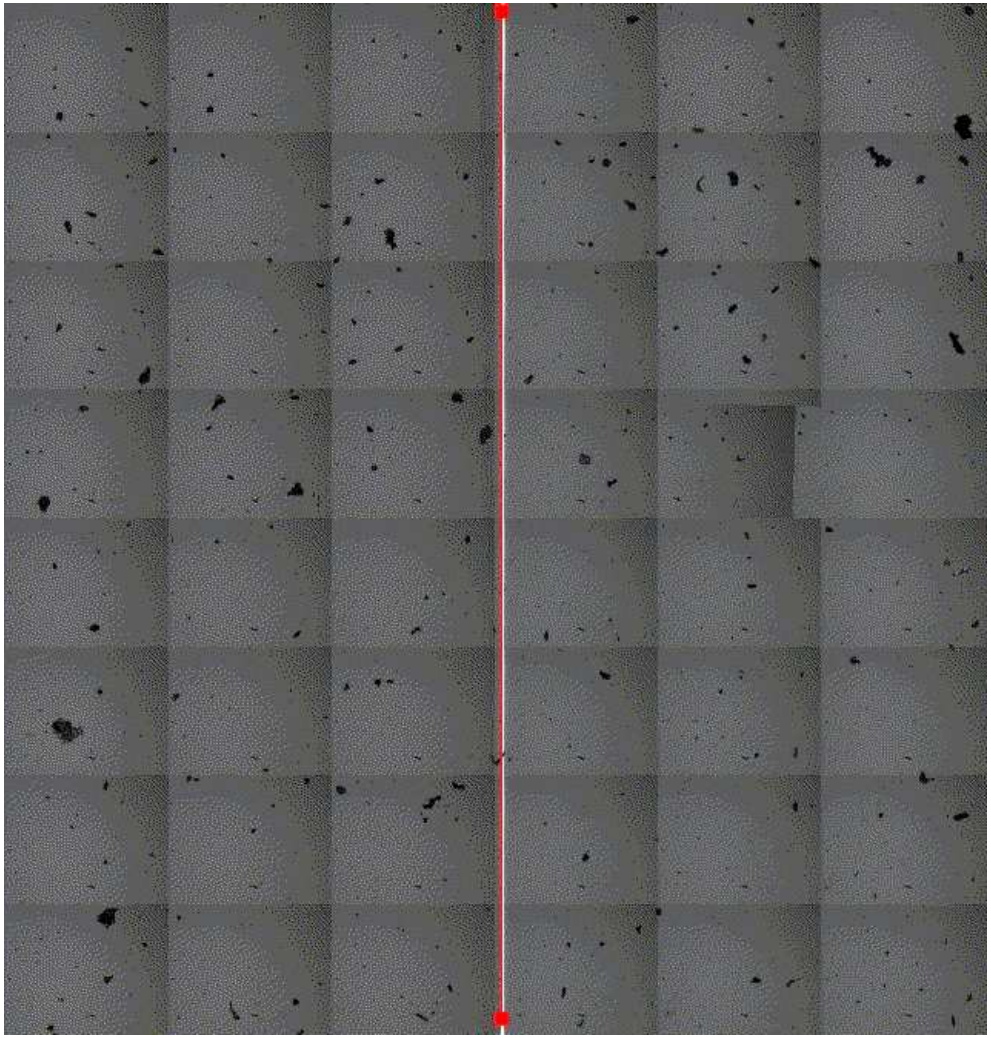




Evaluation of the Correlation



Simulation approach results



The position of the current line is found exactly where the path is situated

Results

- **Magnetic Microscopy is one of the more promising techniques for FA on 3D devices**
- **We are now able to map currents at a lot higher distance than before**
- **We increased the space resolution**
- **However, this technique is still to be improved:**

  Better resolution for even longer working distances can be achieved!