



**BME PARIS**  
BioMedical Engineering  
MASTER'S PROGRAM

## Beyond the Lumen: 4D Flow MRI for Aortic Disease

Open Your Mind Seminar

Friday, Nov 08 2024  
1.30 pm – 3.00 pm

Amphitheater BÉZIER  
Arts et Métiers Institute of Technology  
155 boulevard de l'Hôpital, 75013 Paris

## 4D flow MRI to assess Aortic hemodynamics

Aortic diseases are a significant health concern, often progressing silently and leading to life-threatening complications like dissection or rupture. Understanding the progression of aortic disease, especially in asymptomatic individuals, is crucial for timely intervention and improved patient outcomes. This lecture explores the transformative role of 4D flow MRI in assessing aortic hemodynamics. We will dig into the technical aspects of 4D flow MRI, including data acquisition, image reconstruction, and advanced post-processing techniques for deriving hemodynamic parameters such as wall shear stress, vorticity, and pulse wave velocity. These metrics provide valuable insights into the complex blood flow patterns within the aorta and their impact on the vessel wall.

Explore how 4D flow MRI offers unparalleled, non-invasive insights into aortic blood flow patterns, derived directly from MRI data. This unique approach is revolutionizing our understanding of the mechanisms and development of aortic disease.

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