



## Séminaires ISIR

Jeudi 17 juillet 2014 à 14h00

Arianna Menciassi

Campus Jussieu, 4 place Jussieu, Paris  
Salle de réunion 304

**Title :** Endoluminal and endocavitary robots: some examples for combining flexibility and dexterity

**Abstract :** This talk will focus on the design of endoluminal and endocavitary robots with enhanced flexibility, which is obtained by combining soft materials with fluidic actuation. Starting from previous developments of bioinspired inchworm locomotion robots for colonoscopy, the speaker will present the current approach to develop surgical manipulators without rigid links and with controllable stiffness, or obtained by combining different “bricks” with different size and function. Thus, an analysis about the difficulties of combining flexibility with dexterity will be presented.

**Short Bio :** Arianna Menciassi received her Laurea Degree in Physics (with Honors) from the University of Pisa in 1995. In the same year, she joined the CRIM (formerly MiTech) Lab of the Scuola Superiore Sant’Anna (SSSA) in Pisa as a PhD student in bioengineering, with a research program on the micromanipulation of mechanical and biological micro objects. In 1999, she received her PhD degree by discussing a thesis titled “Microfabricated Grippers for Micromanipulation of Biological and Mechanical Objects”. The main results of this activity have been awarded with the Best Manipulation Paper Award at the International Conference on Robotics and Automation in the year 2001. Her main research interests are in the fields of biomedical micro- and nano-robotics, microsystem technologies, nanotechnologies, biomimetics, micromechatronics. She is working on several European projects and international projects for the development of micro- and nano-robotic systems for medical applications. Arianna Menciassi is co-author of more than 80 international scientific papers, 30 of these on ISI journals, and she is co-inventor of 3 international Patents, 2 Italian Patents and 1 German Patent. She is also co-author of 5 book chapters on medical devices and micro-technologies and of one chapter on “Medical Robotics” in a Springer Handbooks on Robotics.