

## **Anthony HERREL, MNHN**

Engineers have often used living organisms as sources of inspiration for technical solutions. However, living organisms are characterized by a high degree of redundancy complexifying control problems. The epitome of this can be observed in snakes where the locomotor system is comprised of hundreds of vertebrae and hundreds of muscles spanning anywhere from one to 30 vertebrae. Moreover, muscle systems are interconnected with contractions of anterior muscle causing changes in the length of more posteriorly situated muscles connected by complex tendon systems and thus changing the force output of those muscles. I will discuss the evolutionary origins and possible advantages of the mechanical redundancy observed in snakes and will reflect on whether snakes are a good model to use for bio-inspired robotics or not.