

## **Multi-axis quantum sensor for inertial navigation**

The iXAtom laboratory aims at improving classical inertial sensors with quantum technologies. In particular, my PhD focuses on developing a 3-axis hybrid inertial navigation system. The atom interferometer allows to measure the inertial components with high accuracy and no bias, while classical sensors have a high dynamic range and provide continuous measurements.

If the 3-axis hybrid accelerometer was qualified in static operation, their mobile utilization raises new challenges due to the susceptibility of atomic accelerometers to rotations and vibrations which disturb or even extinguish the measurement signal. Real-time methods are currently implemented to compensate rotations and vibrations, then measurement campaigns will be conducted out of the lab in order to characterize the device in field conditions.