



Arttu RAJA-HALLI

From Finland to France



Project: **Gravity** change monitoring

Finnish Institution: **Finnish Geospatial Research Institute (FGI)**

French Institution: **L'École et observatoire des sciences de la terre (EOST) de
l'Université de Strasbourg**

Dates of mobility: **25/04/2022 to 05/06/2022**

Program: **Maupertuis short mobility programme**



PRESENTATION

[Arttu Raja-Halli](#)'s main topics of research are satellite laser ranging and gravity research at the Metsähovi Geodetic Research [Station](#). He is working on his Ph.D. at the Faculty of Science of the [University of Helsinki](#) and the research is directly linked to the gravity research he does at the FGI. In his Ph.D he studies the local gravitational effects caused by environmental mass changes such as groundwater and snow cover variations. Since 2020 he has been responsible for the two superconducting gravimeters operating in Metsähovi Geodetic Research Station.

ACTIVITIES IN FRANCE

Arttu Raja-Halli visited two gravity observatories, J9 Gravity observatory in Strasbourg and Black Forest Observatory in Schilltach Germany, and discussed with several researchers from EOST. His host was [Dr. Severine Rosat](#) with whom he discovered the data analysis procedures used at [EOST](#) for gravity, seismic and environmental data, and was introduced with Matlab and Python program codes used at EOST for hydrological gravity calculations. On the second week, he discussed with [Dr. Jean-Paul Boy](#) about the environmental loading service the EOST is hosting and which FGI is utilizing. During the visit to the [Black Forest Observatory](#) in Germany, Arttu Raja-Halli discussed with Dr. Walter Zurn and [Dr. Rudolf Widmer-Schmidrig](#) on topics related to Metsähovi gravimeter data processing and gravimeter hardware maintenance. Arttu Raja-Halli had the opportunity to enter the old mine of the Black Forest Geophysical observatory where the very sensitive scientific instruments are located. Dr. Zurn and Dr. Widmer-Schmidrig presented the broadband seismometers, gravimeter, tiltmeter and strainmeter installed inside the cave. This was an interesting as the seismic and gravimetric data produced at BFO is very high quality due to very low noise level thanks to remote location and stable temperature conditions inside the long cave. Collaboration between FGI and EOST is being proposed to continue in a proposal submitted to Academy of Finland.