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Magnetic Valley : a research valorization project

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We present here a research valorization project, called “Magnetic Valley”, launched in 2009. This project has been funded by the Belgian government with the purpose to investigate and develop technologies likely to improve socio-economic activities around our Centre de Physique du Globe. The section “Geomagnetic Observations and Instruments”, is concerned with the further development of the automatic Diflux instrument, able to perform automated absolute measurements of geomagnetic inclination and declination with the purpose to make it rapidly available to other observatories. Within this section, we also investigate current and potential market interest for magnetic declination data and offer services such as for instance compass rose certifications, aircraft runway azimuth determinations and delivery of isogonal information or maps. The section “Environmental Magnetism" investigates relevance and limitations of magnetic susceptibility measurements in order to map heavy metal pollution in soils. We are currently developing instrumentation and methodology for environmental magnetic methods, and we try to validate them through comparison with geochemical and other data. One of the scientific interests of section “Ionopsheric Sounding” is the understanding of how global navigation satellite systems (GNSS) signals are affected by the ionospheric activity. The latter is controlled, to a large extent, by the geomagnetic activity and disturbances. It has also effects on GNSS-based positioning. We intend to provide specific services tailored to meet the needs of future Galileo users. In addition, we wish also to promote interest for science and engineering among the young public through our educational activities; for instance we broadcast a film presenting earth magnetism in schools.