

Experiments: Status of the GINGER project

The measurements of the Earth rotation rate variations, certainly important for Earth science, are relevant also for fundamental physics investigation, as they contain general relativity terms, such as de Sitter and Lense Thirring, and they provide unique data to investigate Lorentz violations. Long term continuous operation and very high sensitivity are required, the limit to be reached to study fundamental physics is 1 part in 10^9 of the Earth rotation rate. Present high sensitivity ring laser gyroscopes have record sensitivity for absolute angular rotation, and have already proved the required sensitivity.

The GINGER project is based on an array of ring lasers, the plan is to install it inside the Gran Sasso laboratory at the end of 2024 and start taking data in 2025.

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