

# GINGER

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The Earth's 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 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 large ring laser gyroscopes achieve record levels of performance in the measure of absolute angular rotation, and have already proved the required sensitivity.

The GINGER project is based on an array of ring lasers, its apparatus is described in detail with special attention to its sensitivity limits.

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