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## What can large ring lasers contribute to Earth rotation monitoring?

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Ring lasers are inertial rotation sensors and measure the absolute rotation of a body. Attached to the Earth they act as Earth rotation sensors. The world's most precise ring laser "G" operates in an underground lab at the Fundamental station Wettzell (Bavaria) and is able to detect signals down to  $10^{-8}$  of the Earth rotation rate. Because a gyro only measures the projection of the rotation vector, it is sensitive to angular variations between gyro and rotation axis, e.g. due to polar motion. It is not sensitive to variations of the rotation axis in space (precession and nutation). It is thus the only technique being able to directly measure polar motion. Earth rotation and orientation data are produced continuously and are available nearly immidiately. Limitations in resolution and long-term stability currently confine the detection threshold to signals having amplitudes greater than 1 ms in LOD and 10 cm in polar motion, and periods up to several days. Further improvements in resolution and stability are going to be realized.