



Design and construction of a large 4C ring laser: ROMY

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State of the art ring laser technology gives access to measure very small rotation changes in geodesy and geophysics over a wide frequency range. The interferometric observation technique use two counter-propagating laser beam, the Sagnac effect. This yields to the fact that these observation method is entirely insensitive to translational motions. Until beginning this year only one component ring laser observations was available around the vertical axis. The ROMY project will deliver 4 components in space measuring rotations redundancy for geosciences computed into the Cartesian three directions. Followings that ROMY is the first instrument able to measure the full rotation vector. The sensitivity scales with the size of the instrument and ended up in a tetrahedron shape of 12 m side length standing on a tip. A compromise between the involved parameters and the possibility of physical constructing of such a large instrument. The pure hardware construction has needed more than 1.5 years.

It is outlined the design, development and construction from scratch up to receiving the proposed observation. Involved are the characterisation and the potential of ROMY now and in future.