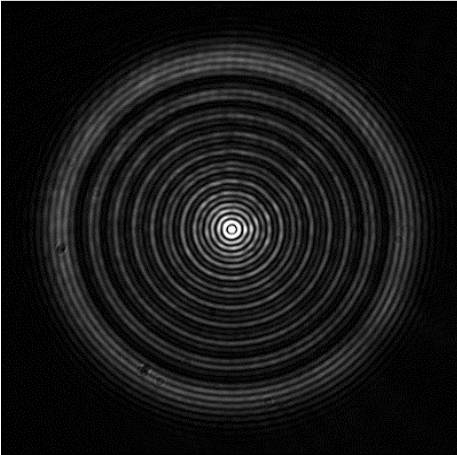


STRUCTURED LASER BEAM

A low-cost, non-diffractive, Bessel-like beam with very low divergence and extremely compact and precise spot size for long distances.



The Structured Laser Beam presents a very low divergence that keeps the spot size within a few millimetres even at distances of hundreds of metres (with a beam waist of a few μm right after the output of the system), this beam may enable lasers to be used for applications not previously possible, or improve precision within existing applications.

Non-diffractive beams (NDBs) are frequently used today, primarily by the use of axicons. These can only generate NDBs over a small portion of the beam, typically limited to a few tens of centimetres. The Structured Laser Beam is tremendously superior, being able to generate an NDB over hundreds of metres, with lower costs. It is therefore possible to envision the application of this beam in applications where NDBs are not typically used today; either in other laser/light beam applications as mentioned above, or entirely different fields. In addition, the Structured Laser Beam exhibits other properties, unique to this beam, and of benefit to other applications.

IP STATUS

- Patent application filed.

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Find out more at:

kt.cern

FEATURES

- Extremely compact spot size and very low divergence.
- Vast improvement in distance over present-day structured beams.
- Self-reconstruction after obstacles.
- Very robust to jitter, vibrations, and variations in the angle of the input beam; it also shows some robustness to fluctuations in air temperature.

APPLICATIONS

- Metrology
- Satellite communication
- Gas detection
- Microscopy
- Medicine
- Optical tweezers
- Laser show



technology

Knowledge Transfer
Accelerating Innovation