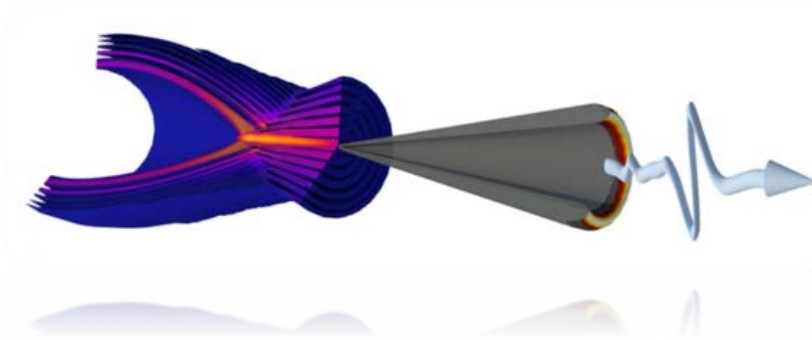


# Remote strong THz fields from ring-Airy light bullets

---



Laser-plasma based THz emitters offer broad radiation bandwidth, high output pulse energy and immunity to high power damage. Various excitation wavelengths and gases were explored to seek for a stronger THz wave emission from laser-induced plasmas, whereas few attempts were made for this purpose with artificially modulated exotic wave packets. We demonstrate that abruptly autofocusing beam induced air-plasmas can give a more than 5-fold enhancement of the THz wave pulse energy compared to normal Gaussian beam induced plasmas under the same conditions and this at well controlled remote locations. This work is expected to inspire a new direction for controlling THz radiation from laser-induced plasma and pave the way to THz remote spectroscopy, which is considered critical for both homeland security and environmental monitoring.

More information can be found in:

**K. Liu, A. D. Koulouklidis, D. G. Papazoglou, S. Tzortzakis, and X.-C. Zhang**, "Enhanced terahertz wave emission from air-plasma tailored by abruptly autofocusing laser beams," [Optica 3, 605-608 \(2016\)](#)