



## Generation of coherent light state superpositions and applications in non-linear optics

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### ABSTRACT

High Harmonic Generation (HHG) is a fundamental process in strong laser physics, critical to atomic, molecular, and optical research, and central to attosecond science. In our fully quantized approach<sup>[1,2]</sup>, we have shown that quantum operations in the HHG process, can lead to the generation of optical Schrödinger "cat" and entangled light states with controllable quantum features. The generated states are strong enough to be implemented in non-linear optics<sup>[3]</sup>. These results mark the initiation of a diverse range of new investigations in fundamental science and exciting developments in quantum technologies<sup>[1]</sup>.

### REFERENCES

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