We theoretically simulate high harmonic generation in the frequency domain and attosecond pulse generation in the time domain from helium atom irradiated by a combined laser pulse field using Lewenstein’s strong-field approximation model in Fortran code. For details of the mathematical model, please read the paper Yu, W. et al., “Attosecond pulse generation isolated with a polarization-ionization gating scheme,”

The mathematical expression of the combined laser pulse field are defined as:

```
EX(I)=EX0*dcos(omgax*t(i)+differ_p+startphase)*DEXP
(-2.d0*DLOG(2.D0)*(T(I)+td/2.d0)**2.D0/(taox**2.D0))
```

```
EY(I)=EY0*dcos(omgaY*t(i)+startphase)*DEXP
(-2.d0*DLOG(2.D0)*(T(I)- td/2.d0)**2.D0/(taoX**2.D0))
```

Where td is the time difference at the center of the envelope of the two polarizations,
startphase is the initial phase, differ_P is the phase difference introduced due to td, and differ_p must be an odd

multiple of pi/2 in order to form a circular or elliptical deviation at the intersection of the two pulses.

After comparison, we use the parameter td=1.25T, startphase=0.5pi
(146 order supercontinuum in the case of two polarizations electric field, no supercontinuum in the case of x direction alone) data are attached to origin.