Computing Ultrafast Electron Dynamics

Screening summary of the CUED program

The CUED program is developed and maintained by:

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Contents

1   Information

The data presented in this PDF is a collection of the data produced by all parameter combinations. It is not new data but only presented in a cohesive form to make it easier to see parametric dependencies.
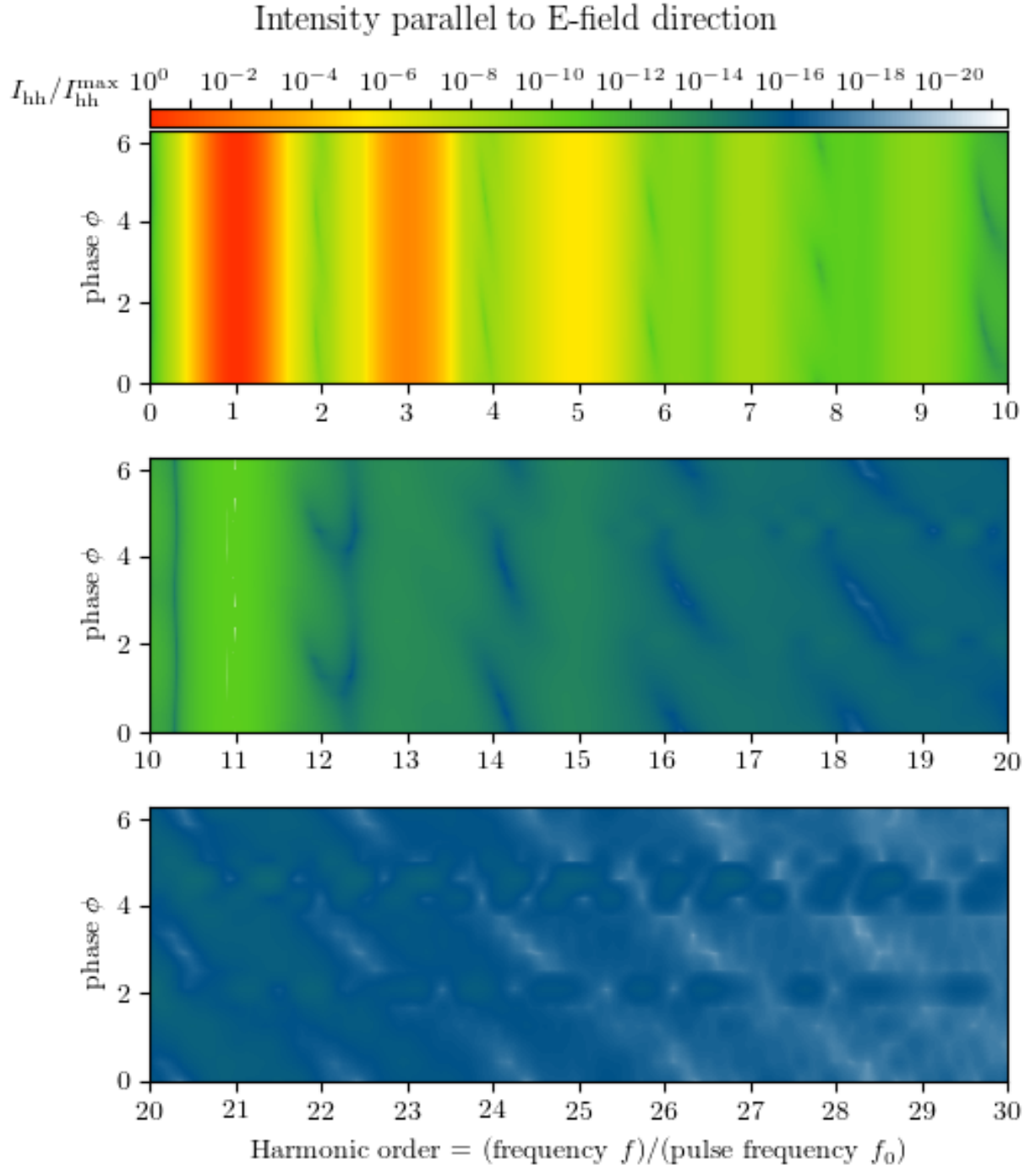
2 Screening results parallel Emission

Figure 1: Screening plot of phase against frequency. The maximum intensity in electric field direction is $I_{hh}^{max} = 1.2383 \times 10^{-18}$ [a.u.].
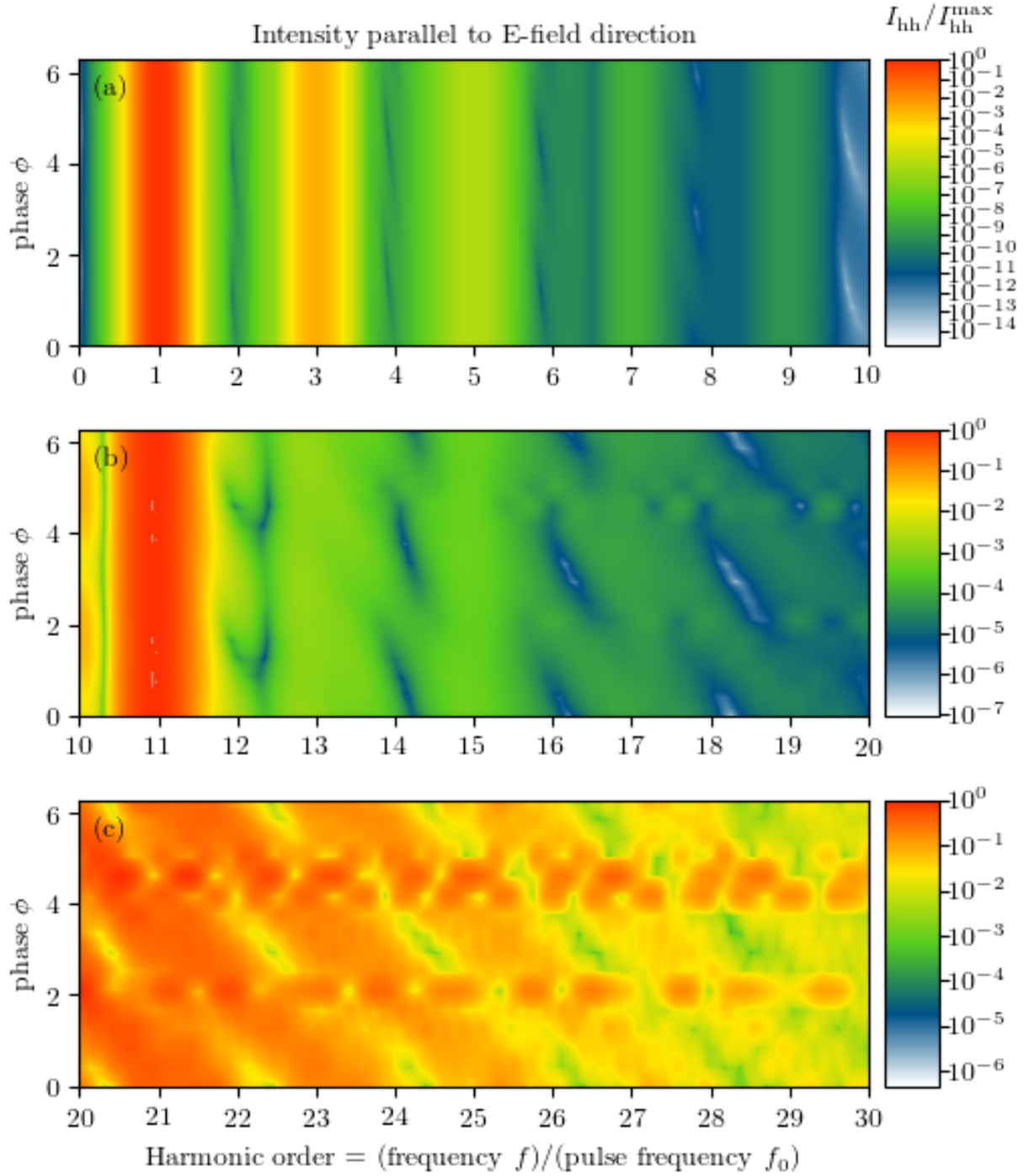
Figure 2: This plot is a repetition of fig. 1 with individual color highlighting per higher harmonic region. The maximum intensity in electric field direction for the plots is (a): $I_{hh}^{max} = 1.2383 \times 10^{-18}$ [a.u.], (b): $I_{hh}^{max} = 3.2747 \times 10^{-29}$ [a.u.] and (c): $I_{hh}^{max} = 1.0455 \times 10^{-33}$ [a.u.].
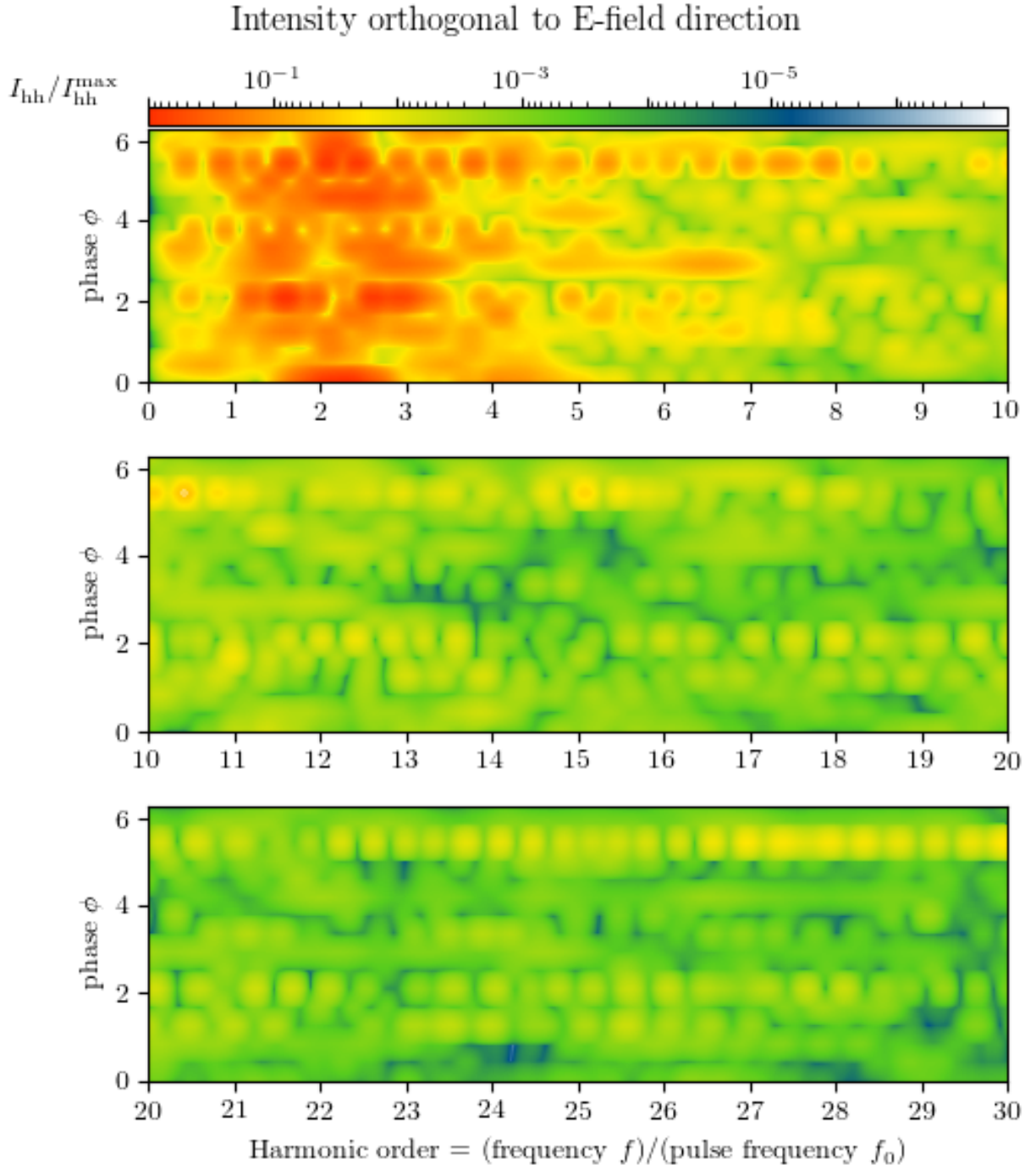
3 Screening results orthogonal Emission

Figure 3: Screening plot of phase against frequency. The maximum intensity orthogonal to the electric field direction is $I_{hh}^{max} = 2.3378 \times 10^{-35}$ [a.u.].
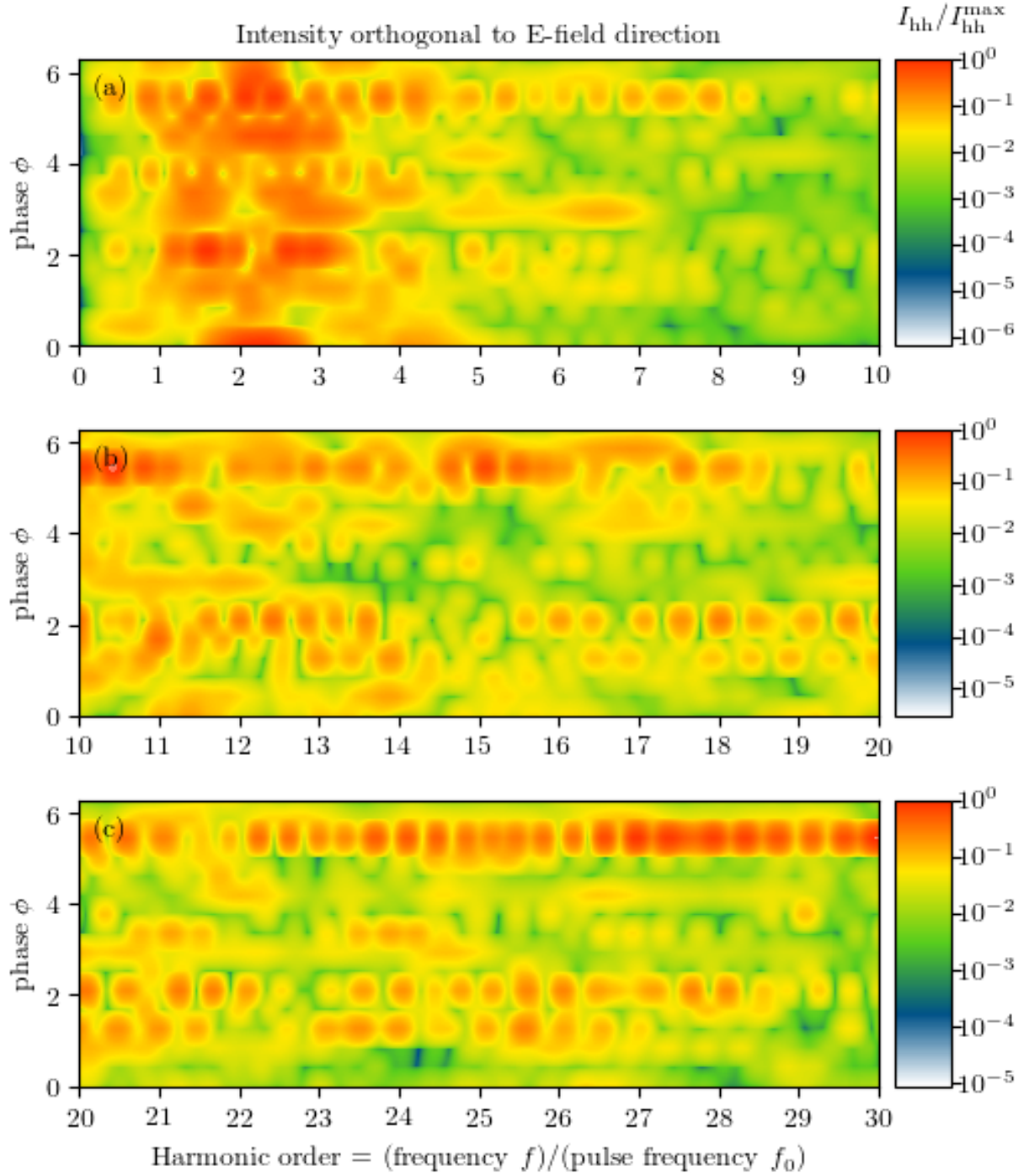
Figure 4: This plot is a repetition of fig. 3 with individual color highlighting per higher harmonic region. The maximum intensity in electric field direction for the plots is (a): $I_{hh}^{max} = 2.3378 \times 10^{-35}$ [a.u.], (b): $I_{hh}^{max} = 9.8284 \times 10^{-37}$ [a.u.] and (c): $I_{hh}^{max} = 4.4664 \times 10^{-37}$ [a.u.].
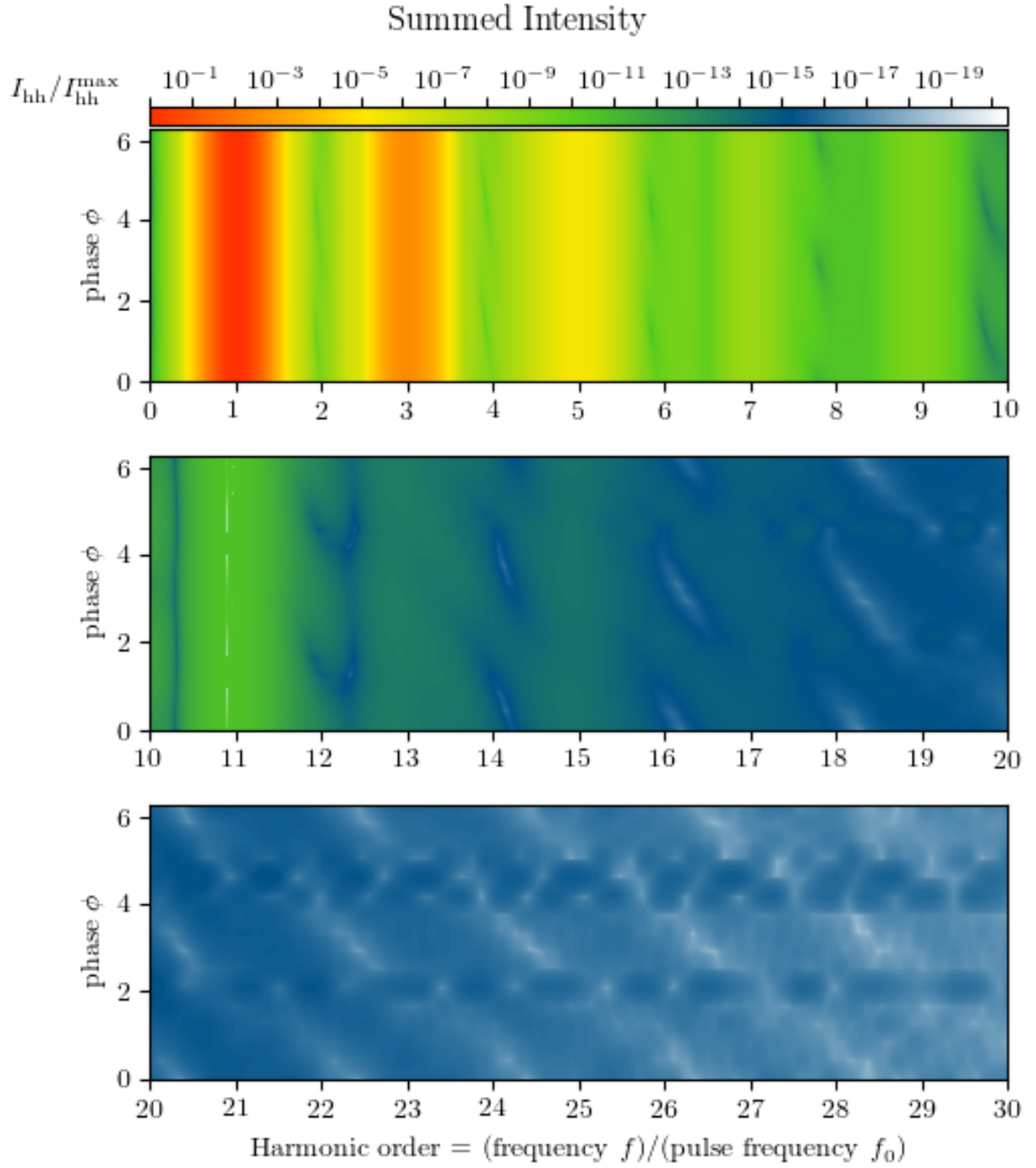
4 Screening results sum of Emissions

Figure 5: Screening plot of phase against frequency. The maximum intensity orthogonal to the electric field direction is $I_{hh}^{max} = 1.2383 \times 10^{-18}$ [a.u.].
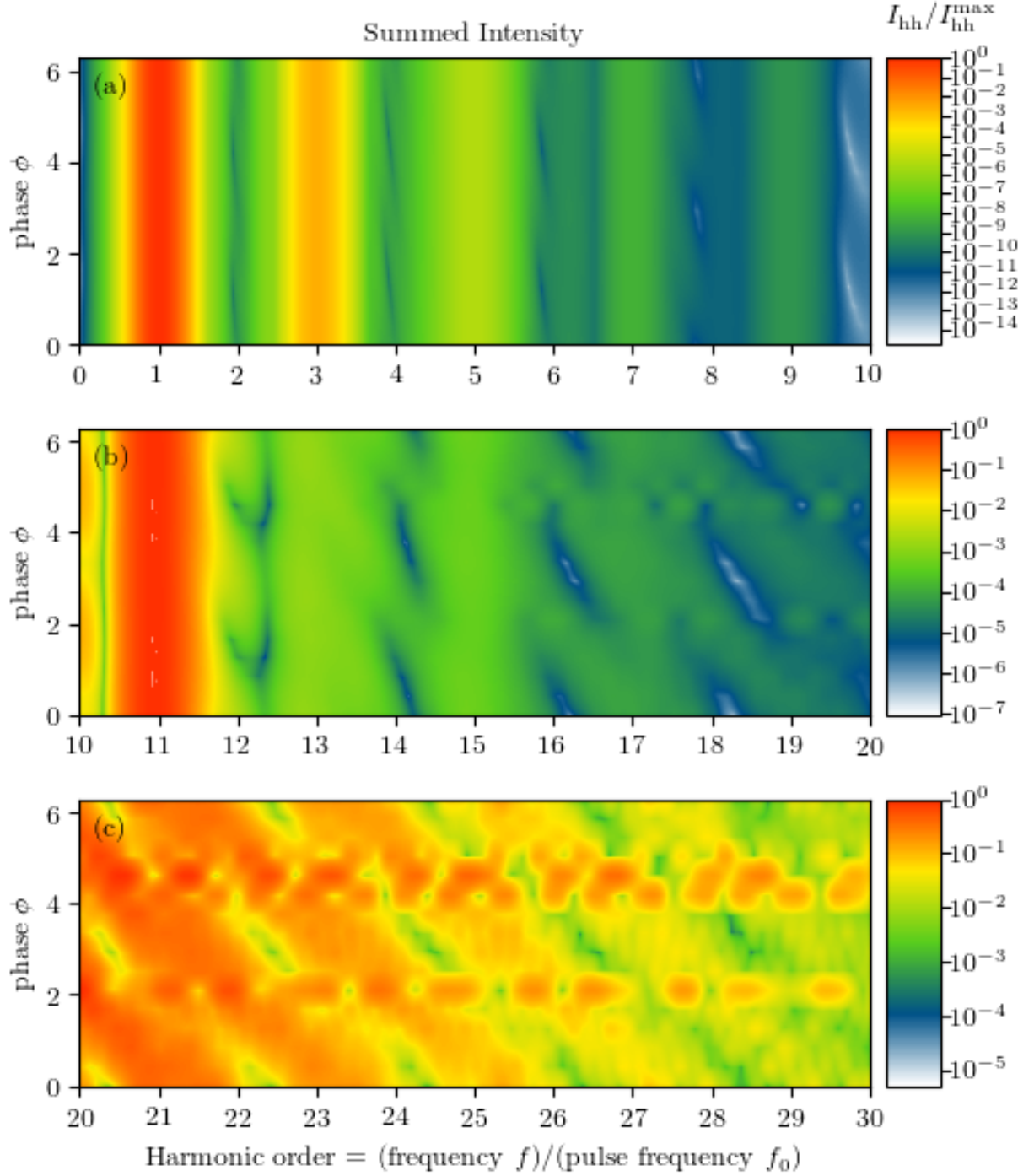
Figure 6: This plot is a repetition of fig. 5 with individual color highlighting per higher harmonic region. The maximum intensity in electric field direction for the plots is (a): $I_{hh}^{max} = 1.2383 \times 10^{-18}$ [a.u.], (b): $I_{hh}^{max} = 3.2747 \times 10^{-29}$ [a.u.] and (c): $I_{hh}^{max} = 1.0456 \times 10^{-33}$ [a.u.].

5 References

When using the CUED software package, please reference to CUED by citing the following publication:

[1] J. Wilhelm, P. Grössing, A. Seith, J. Crewse, M. Nitsch, L. Weigl, C. Schmid, and F. Evers, *Semiconductor-Bloch Formalism: Derivation and Application to High-Harmonic Generation from Dirac Fermions*, Phys. Rev. B **103**, 125419 (2021).