# Computer Simulations for Attosecond dynamics of multi-electron atoms

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**Overview**

Attosecond science is the study of the fastest dynamics in physics- the motion of electrons driven by short pulses of light. In the Centre for Light-Matter Interactions (CLMI), we address these dynamics using one of the most sophisticated computational approaches in the world. The RMT (R-matrix with time dependence) code is capable of solving the time-dependent Schrödinger equation (TDSE) for multielectron atoms and ions in strong laser fields with a full account of electron correlation and has been exploited to deliver some truly exciting results in recent years.

Underpinning this science is almost 50 years of computational physics code and history. In this summer internship, the student will learn how to use some of the software and use it to produce new data sets for use in the attoscience research of CLMI.

**Required Background**

This project will involve data analysis / programming in a LINUX/UNIX environment. Experience with computer programming and Terminal commands is beneficial. Familiarity with atomic physics is preferred but not essential.

**Further Reading**

<https://theconversation.com/what-is-an-attosecond-a-physical-chemist-explains-the-tiny-time-scale-behind-nobel-prize-winning-research-214907>