

Physics Colloquium

Varun Makhija

University of Ottawa

Holding and Spinning Molecules with Laser Pulses

Gas molecules at room temperature, such as the oxygen and carbon dioxide in the air we breathe, are in a constant state of agitation. They dart about the room, collide against each other and are constantly spinning about their axes. Measuring their properties in such a state is difficult - like trying to take a clear, still photograph of an object in rapid motion. Research over the past 20 years has led to the application of intense, femtosecond (10-15) pulsed lasers to fix gaseous molecules in space under collision free conditions. This in turn has led to numerous measurements on fixed molecules providing new insights into the physics of molecules. I will describe the physics underlying the control of molecular rotation with laser pulses, as well as some measurements made with specific molecules held fixed.

Date: Friday, February 16th, 2018

Time/Place: 12:30 PM / SCP 317

