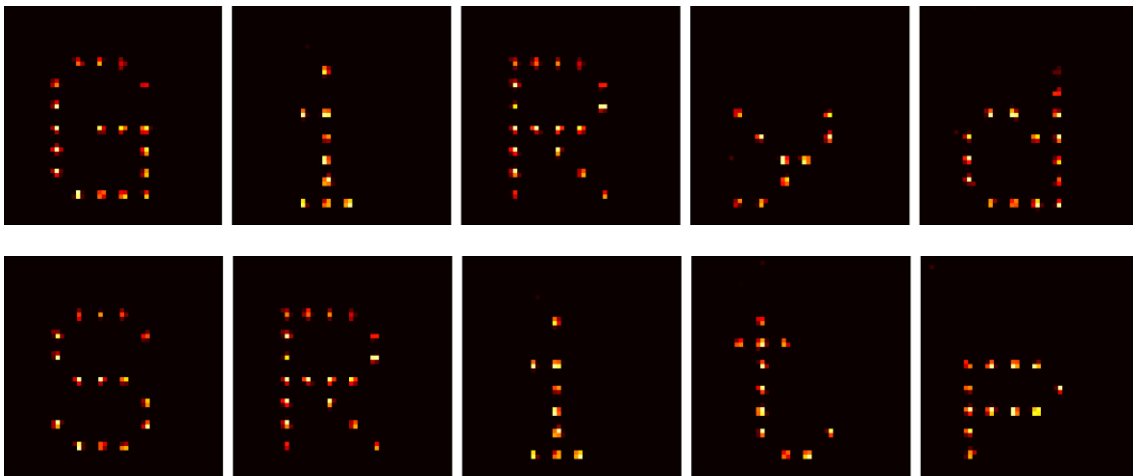


Rydberg atoms in arrays of optical tweezers

This lecture will present the basics of single atom trapping in optical tweezers, i.e. dipole traps with micrometer size. Using an holographic technique, the tweezers can be arranged in 2 and 3-dimensional arrays, with a typical distance between the traps on the order of a 3-20 micrometers. We use a sorting method to move the atoms in this array and assemble configurations of atoms in any desired geometry. The lecture will then present the measurement of three types of interaction between 2 Rydberg atoms: van der Waals, resonant dipole-dipole and resonant interaction induced by an electric field (Förster resonance).



Fluorescence images of individual atoms trapped in arrays of optical tweezers separated by a few micrometers