

Rotating Single Atom in Optical Ring Lattice

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Observation of single atom in a dipole trap

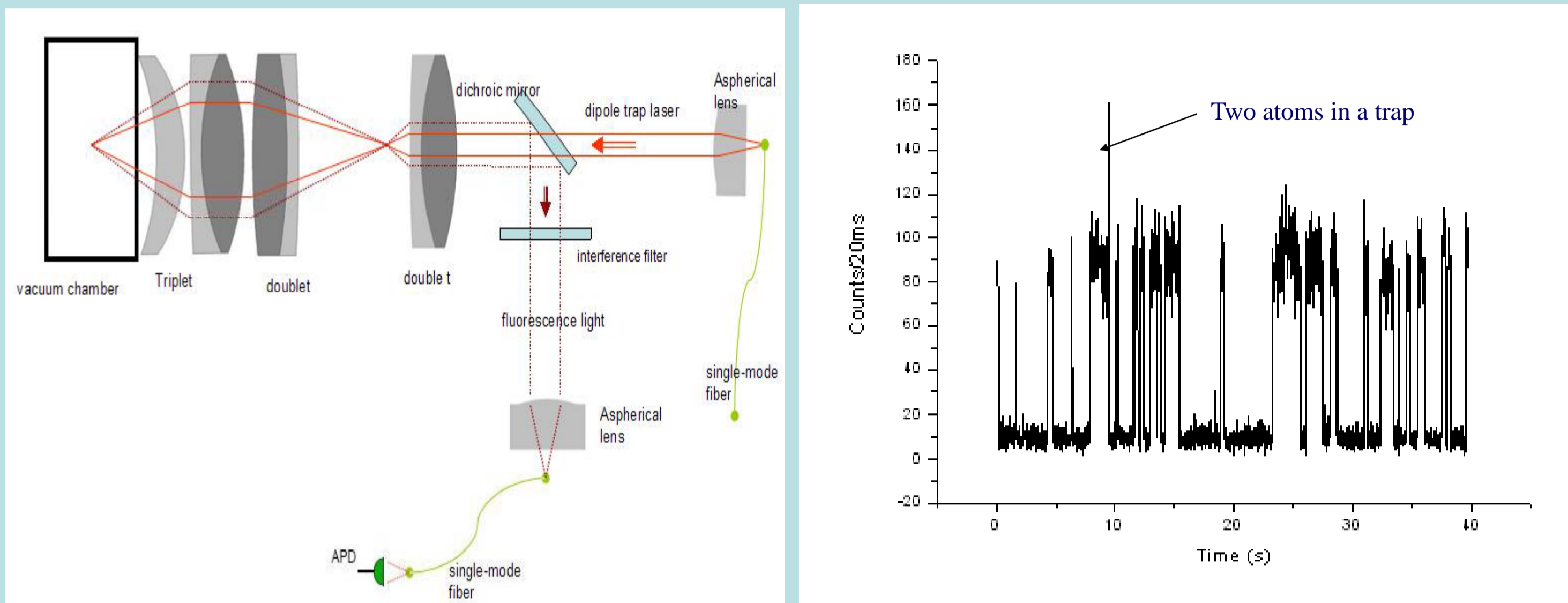
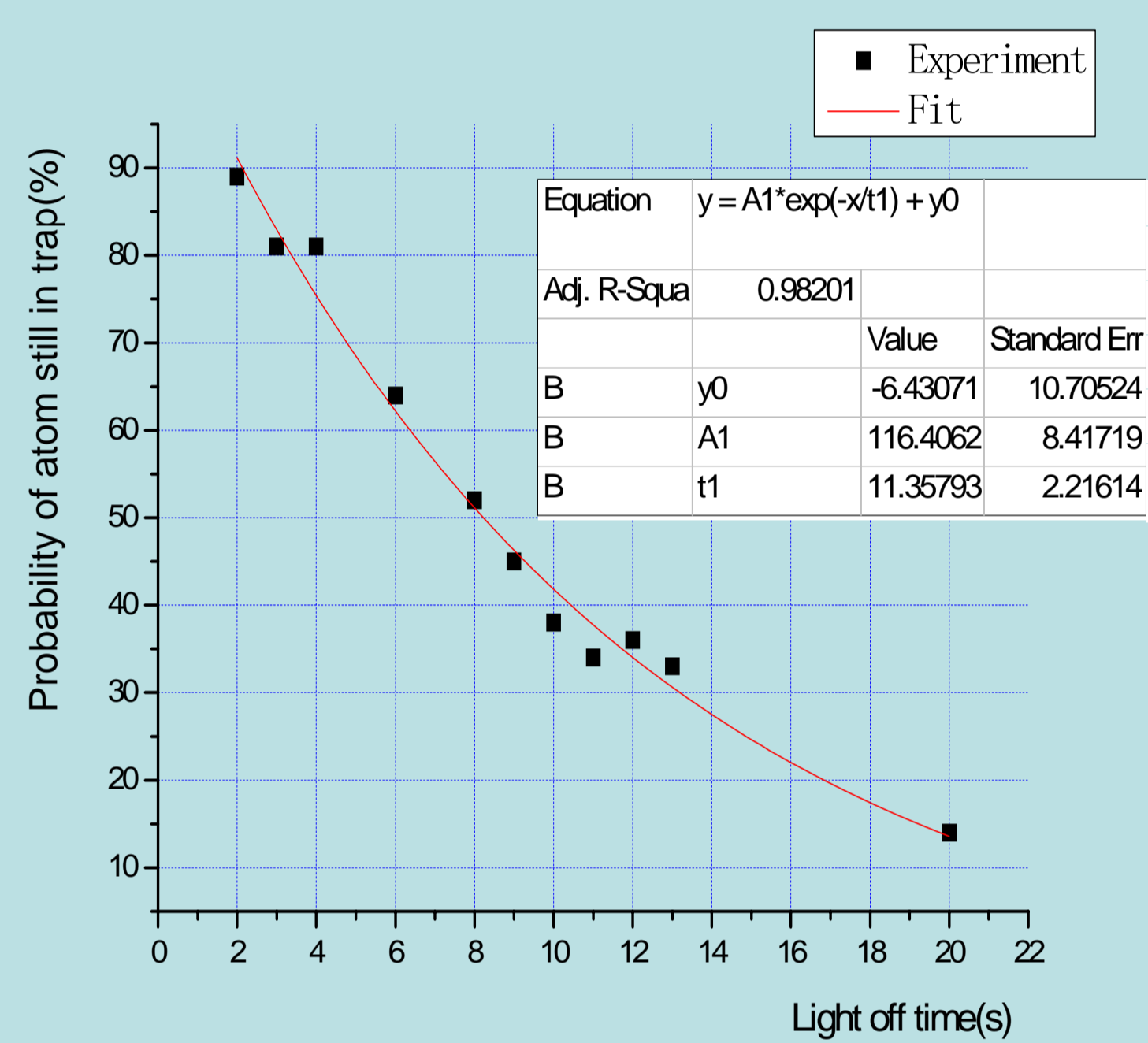
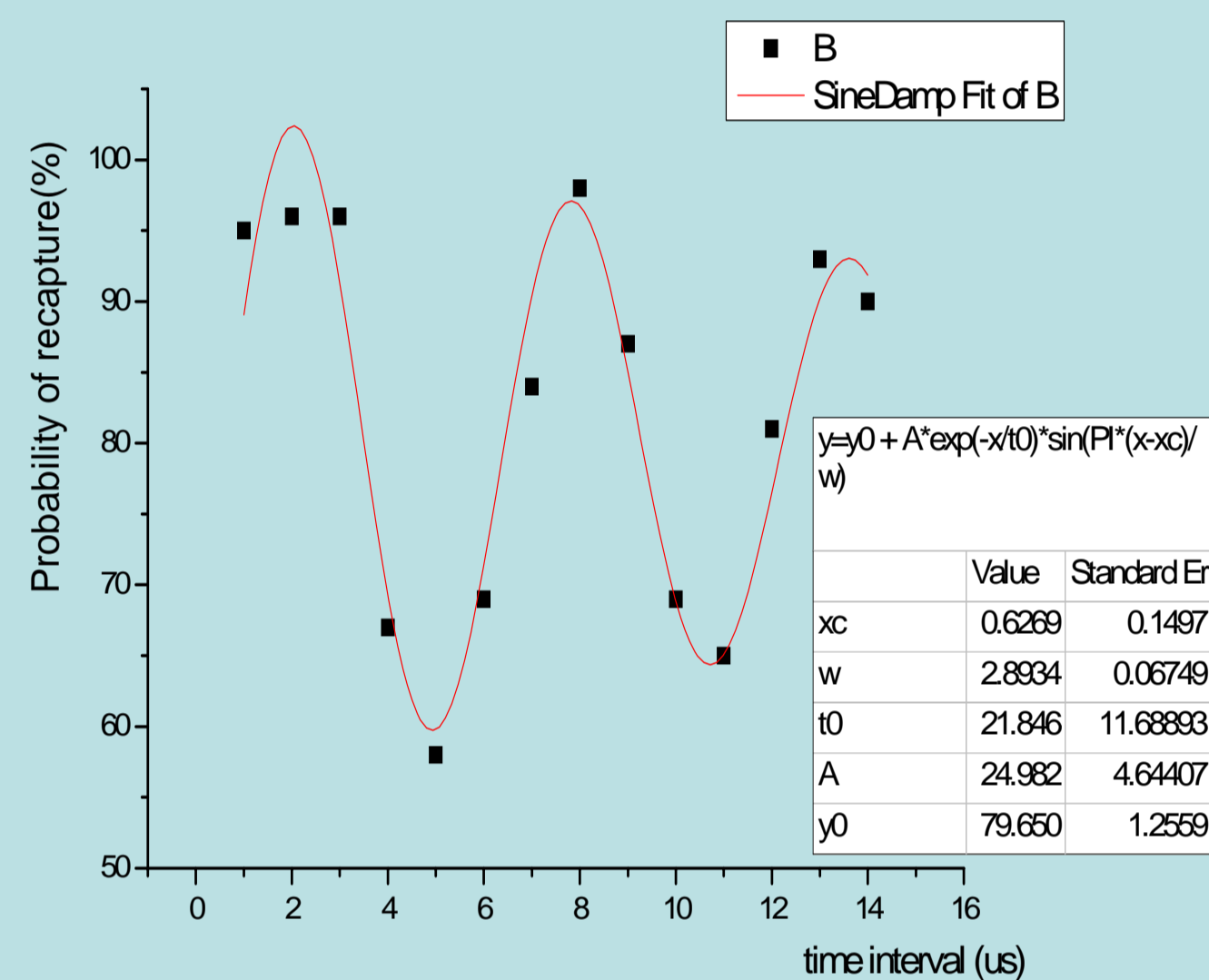


Diagram of the experimental setup.

Single atom fluorescence

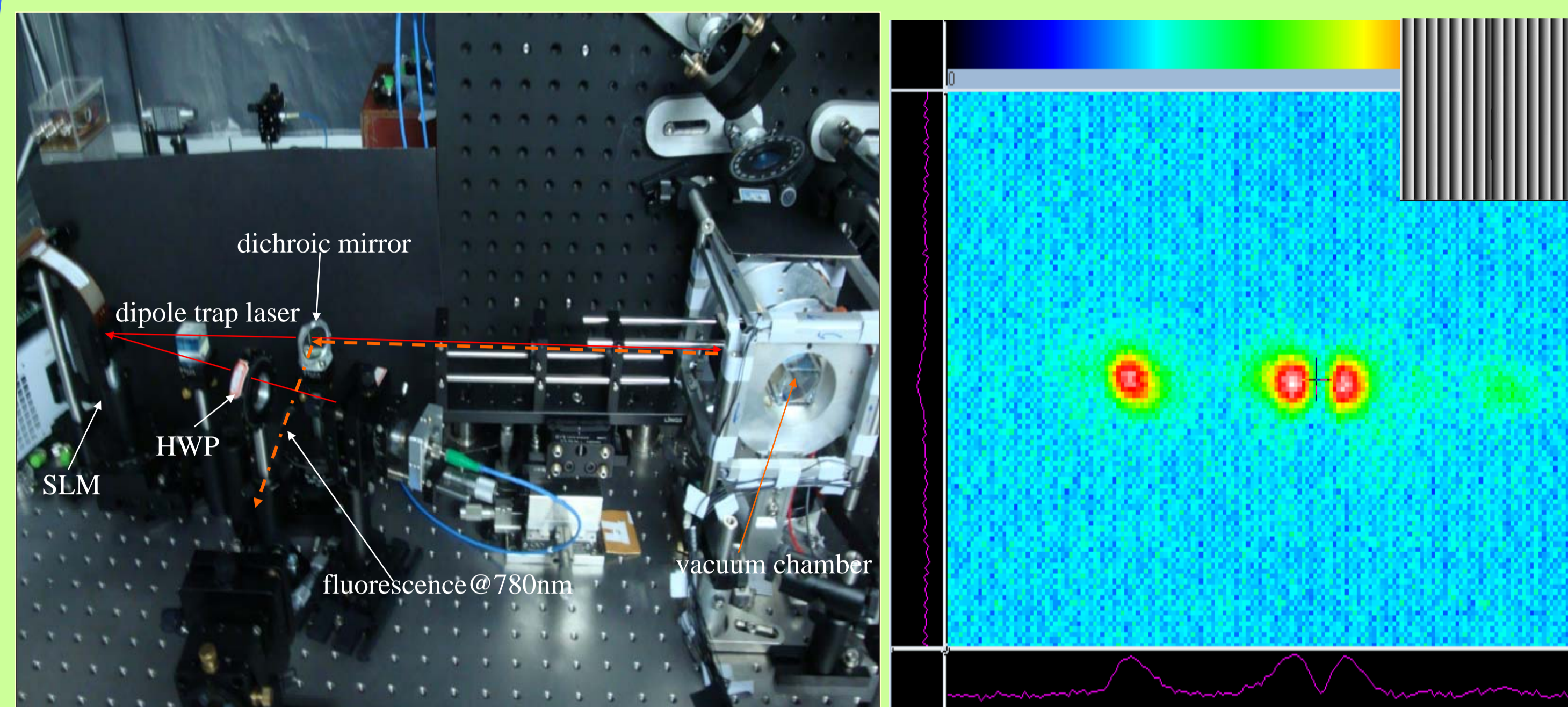


The trap lifetime



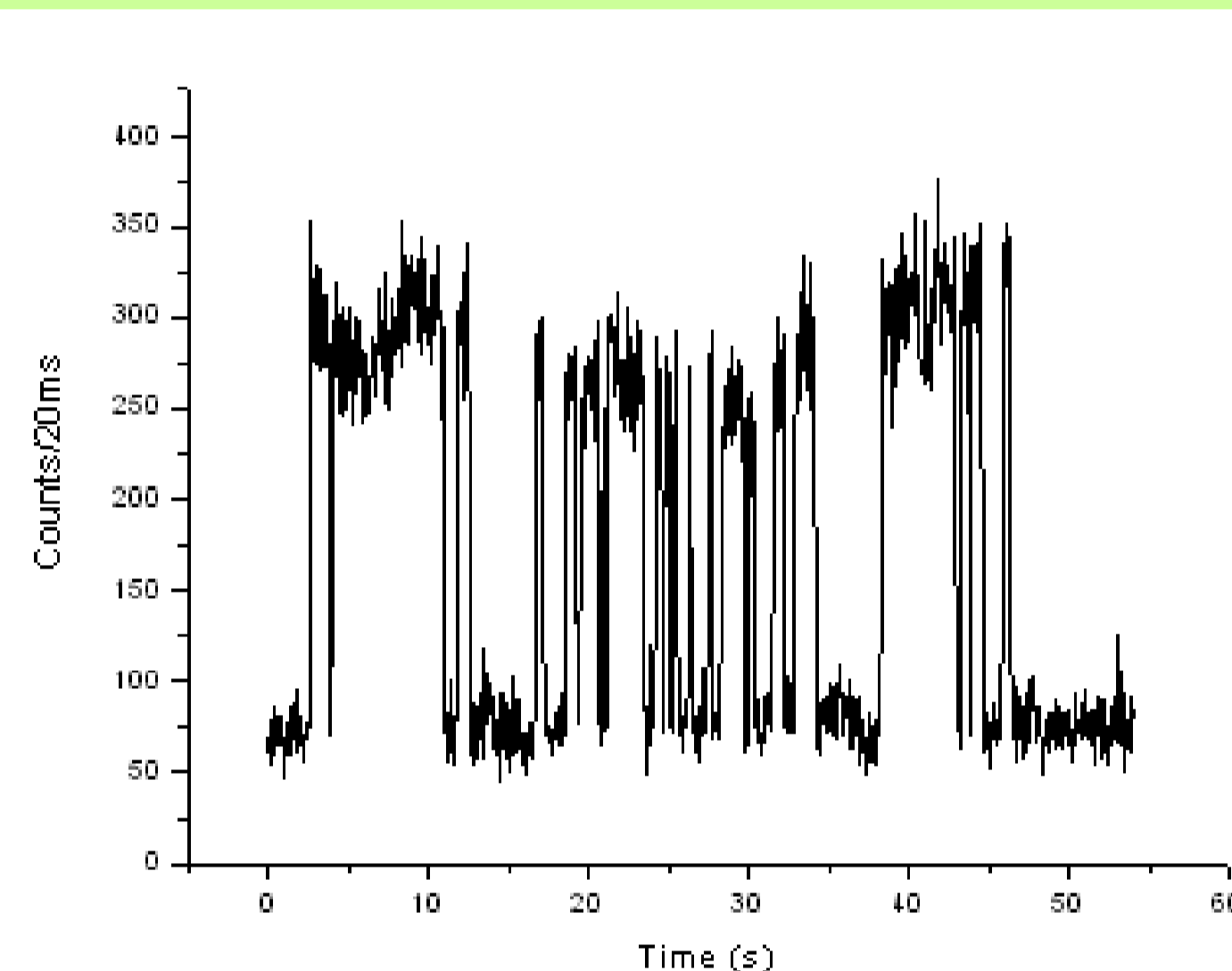
The oscillation frequencies of trap in the radial directions.

Single atom ring lattice generated by a spatial light modulator (SLM)

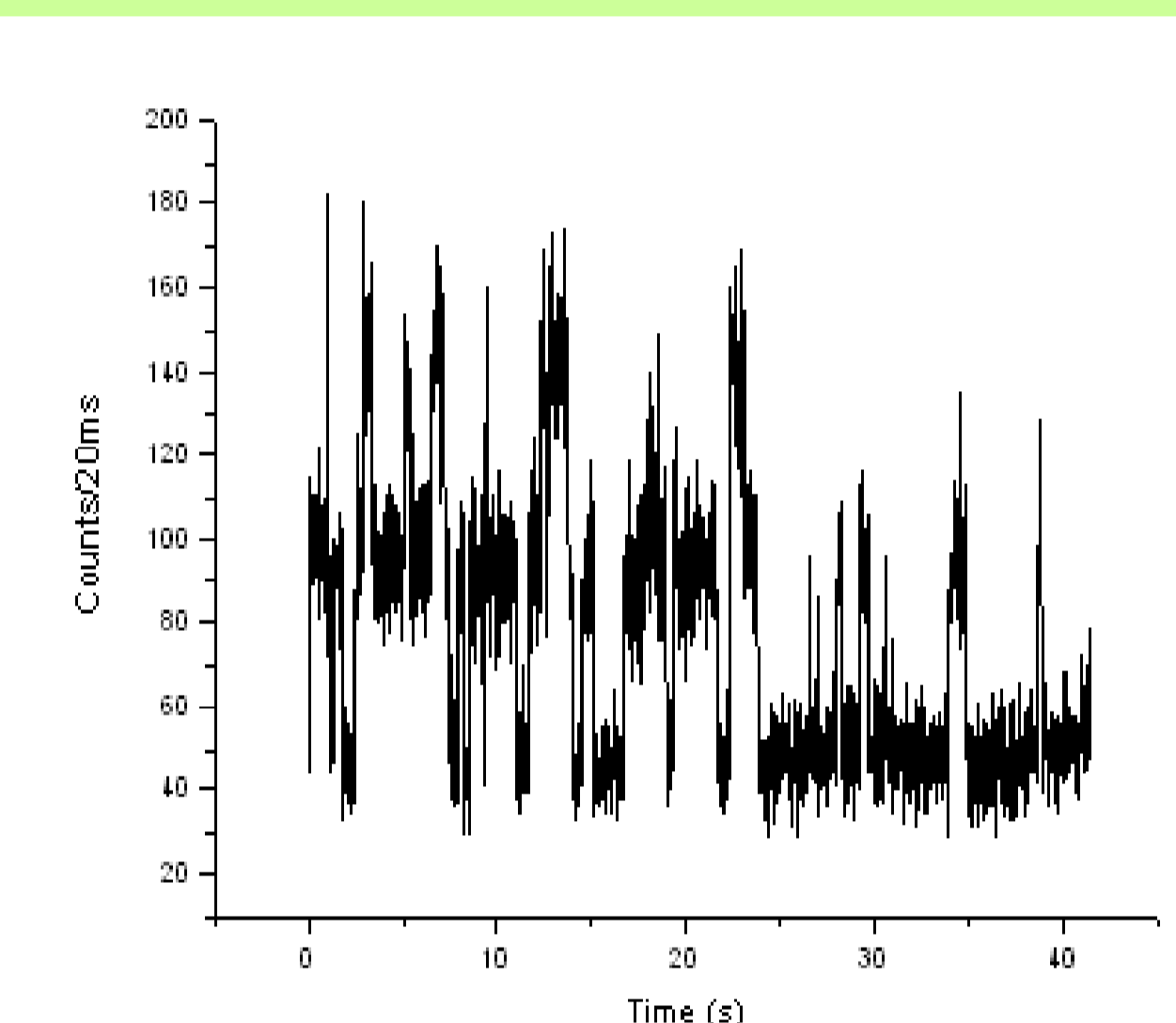


Experimental setup.

Holographic traps

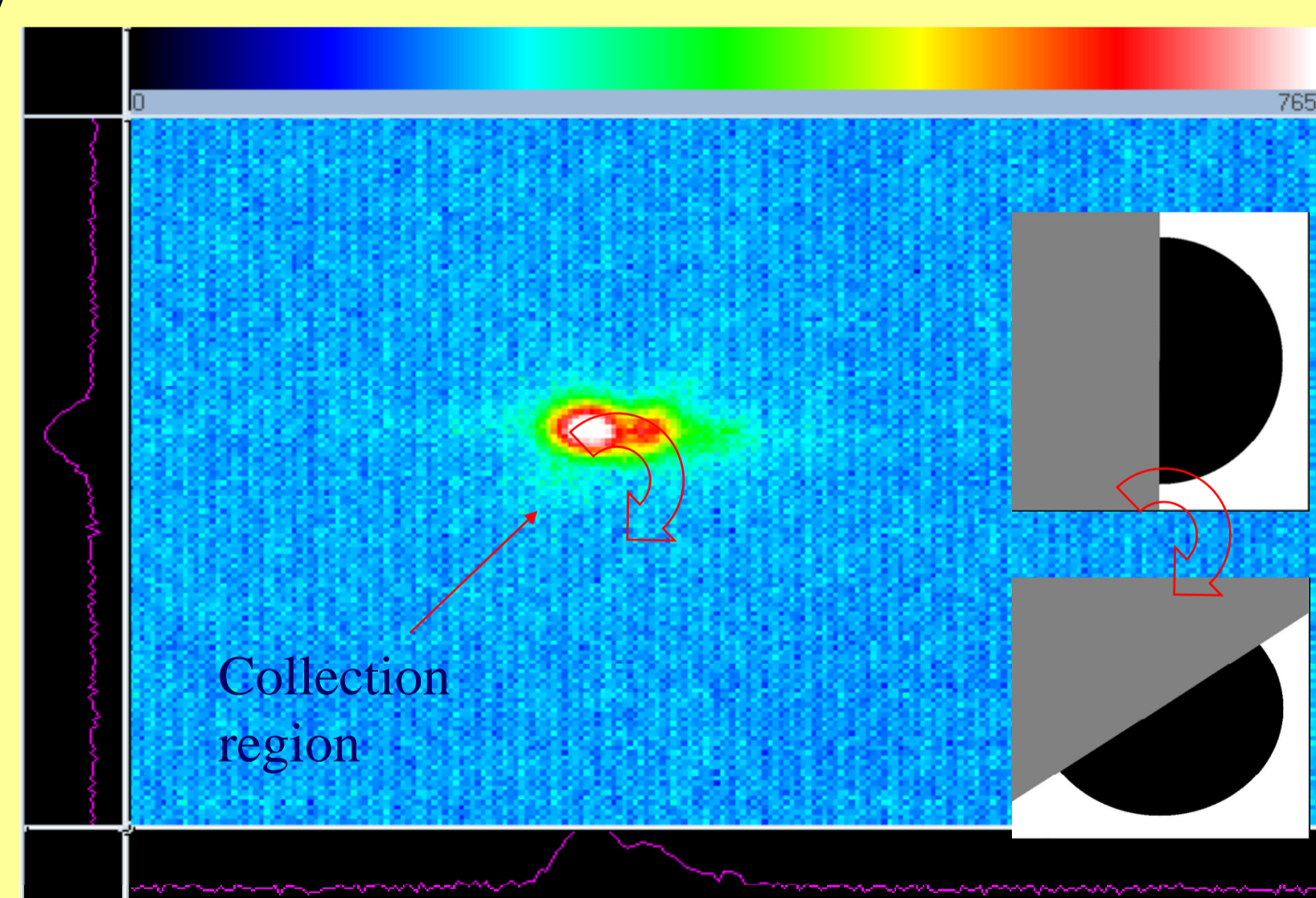


Fluorescence of single atom in the trap.

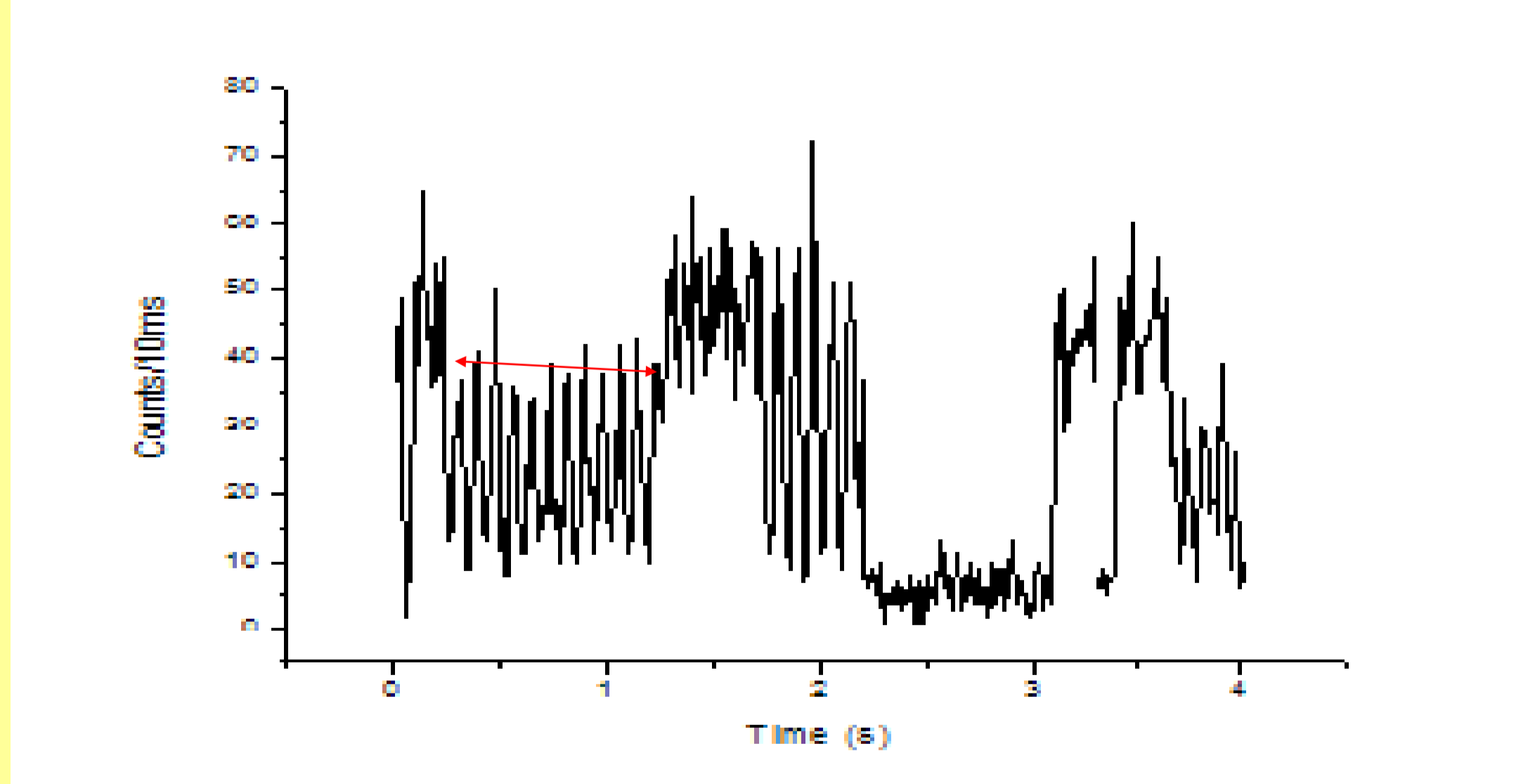


Fluorescence of double atom traps

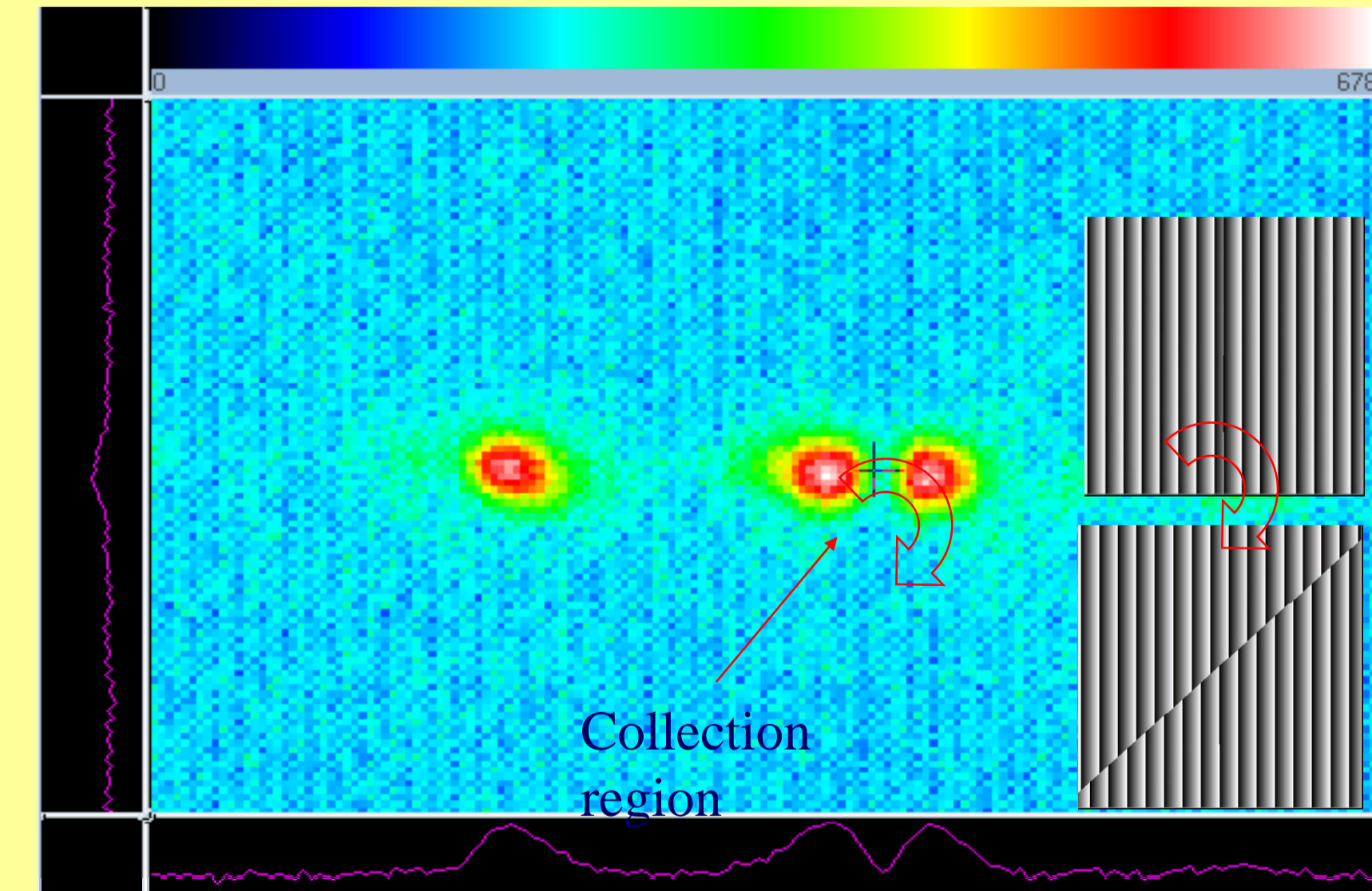
Rotation of single and double atoms in the ring lattice



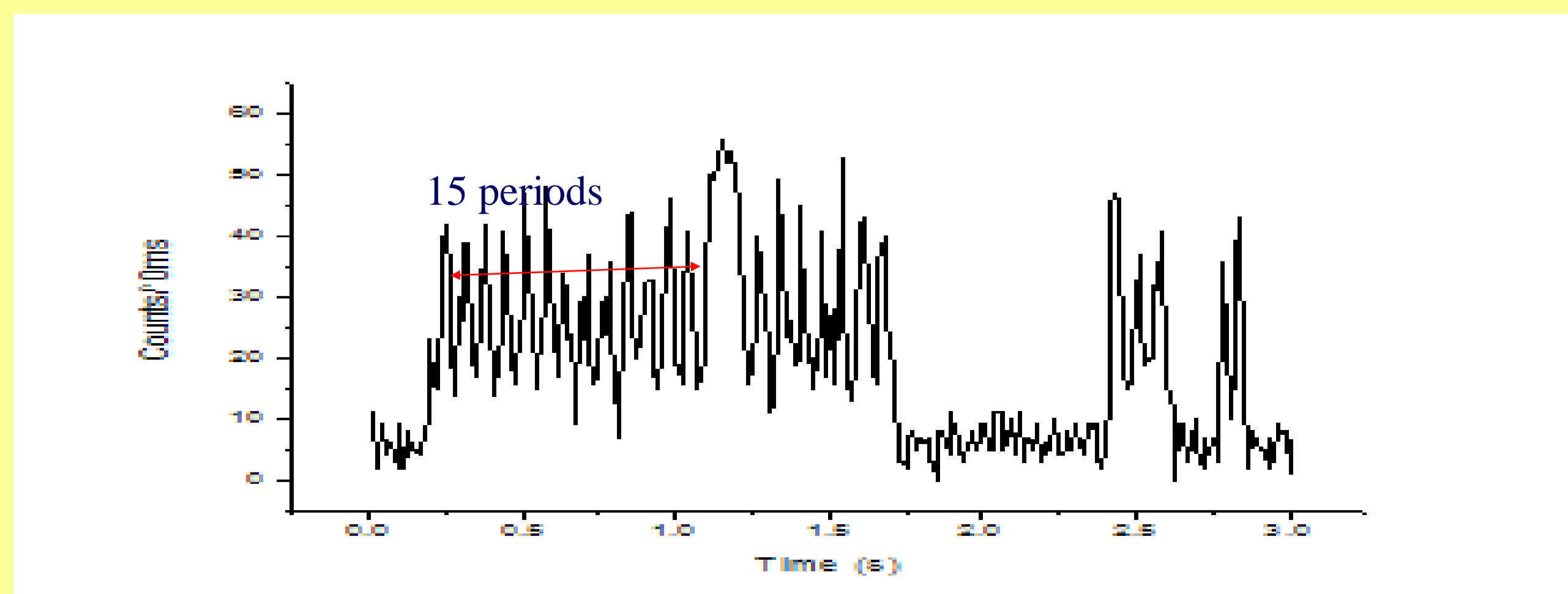
Signal of holographic traps



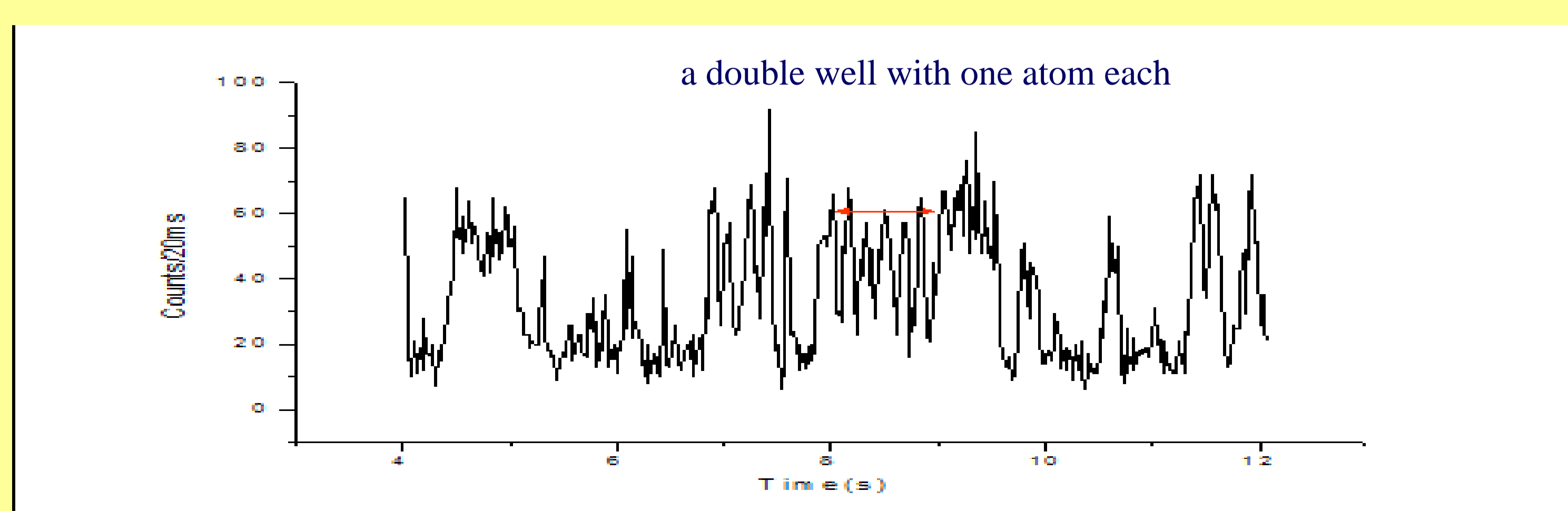
The rotation frequency of 12Hz, thus includes 12 oscillation periods in a second.



Rotation of two atoms trapped separately in the double traps. The rotation frequency is 3 Hz.



Fluorescence of a single atom trapped in a rotating optical lattice. The rotation frequency is 15Hz.



Fluorescence of two atoms trapped in a rotating double well.