Optical Lattice Clock

Tetsuya Ido¹

(1) National Institute of Information and Communications Technology, Koganei Tokyo, 184-8795, Japan

Email: ido@nict.go.jp

Received: 4 March 2012 Accepted: 12 March 2012 Published online: 21 April 2012

Abstract
Latest progress in optical atomic clocks is so rapid that serious discussions toward the redefinition of the second is initiated. Besides single ion clocks developed since early 1980s, optical lattice clocks just invented a decade ago are one of strong candidates as a method to realize the revised definition. The current situation of this emerging method of optical clocks is briefly described.

Keywords
Atomic clock – Optical frequency standard – Lattice clock – Alkaline earth atoms – Laser cooling