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Time averaged optical dipole traps for cold atoms PEYMAN AHMADI, BRIAN TIMMONS, GIL SUMMY, Oklahoma State University — Achieving high atom populations in optical traps, (created by laser light far-detuned to the red of an atomic resonance, FORT) is essential for various experiments especially for all optical realization of a Bose-Einstein condensate. However an efficient loading of these traps still remains a challenge. The focus of this talk is to explain a new approach of maximizing optical trap populations. We show that the FORT population (N_{FORT}), which is proportional to the FORT volume, saturates once a certain potential depth is reached. Our goal is to increase the volume and keep the potential depth at its saturation limit. This is accomplished by a fast sweeping of the FORT beams while loading takes place. We observe a considerable increase in $N_{FORT}$for certain amplitudes and frequencies of the sweeping. A detailed study of these time averaged optical traps will be presented.

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