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Calibrating the Forces of Optical Tweezers

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Poster Presentation P19

CALIBRATING THE FORCES OF OPTICAL TWEEZERS

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Optical Tweezers use laser light to trap micro- and nano-scale particles, typically suspended in solution. We describe a set-up that allows flexible creation of optical traps, simultaneous monitoring of particle positions, and measurement of the optical forces produced. Using a spatial light modulator (SLM) we create different trapping geometries. A quad-photodiode (QPD) and CCD camera allow for particle position detection. Analysis of data from these instruments lets us achieve a calibration of the optical forces.