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## Optical tweezers: a statistical approach

*Saturday 20 April 2024 17:50 (20 minutes)*

Optical tweezers have emerged as a powerful tool for manipulating microscopic particles with precision and control, finding applications across various fields, such as nanotechnology and life sciences. In this talk, I will derive the statistical description of the particle dynamics inside the optical trap, as well as methods that can be used to recover trap parameters from experimental data.

Alongside the mathematical description, I will present the results of Monte Carlo simulations illustrating the probabilistic nature of particle trapping and allowing for a more qualitative understanding of the discussed phenomena.

### Field

Physics and Astronomy

### Length

Long 20 min

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