



# Appunti di Fisica '16 & Dottorato di Ricerca in Fisica

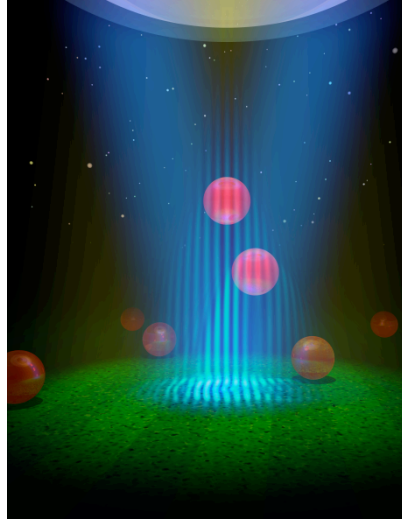
**21 settembre ore 15:00**  
**Sala seminari, CNR-IPCF**

## **From solar sails to optically self-arranged and propelled microstructures**

**Pavel Zemánek**

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The talk briefly introduces the optical forces coming from the interaction of light with an object. The most familiar demonstration of this effect is radiation pressure and its usage for propelling of satellites using solar sails. However, spatial shaping of the laser beam intensity and phase and development of spatial light modulators paved the way for much complex manipulation with objects, however only at the microworld level. A brief review of different examples and applications will be demonstrated, for example holographic optical tweezers, measurement of tiny pN forces, optical rotors, delivery of microparticles and nanoparticles over macroscopic distances by an optical conveyor belt, sorting of objects of different properties by light sieves, pulling and pushing of objects by optical "tractor" beams and various forms of self-arrangements of microparticles into so-called optically-bound matter.



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